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Head of Scott Paper Co. Makes Good Report

President T. B. McCabe States Earnings Were 8.2 Per Cent Higher In 1940 and Comments On Pulp and Business Situation of His Concern—Moore & White Co. Gets 100-Inch Wire Fourdrinier Order.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 24, 1941—The Scott Paper Company, Chester, Pa., manufacturers of toilet tissue and towels, reports for the year 1940 net earnings of $1,482,329 for the common shares. Per share earnings calculated on the 667,941 common shares outstanding December 31, 1940, were $2.22 per share as compared with $2.60 per share in 1939 on the same basis. Dividends on the common stock during the year were paid at the rate of $1.85 per share including an extra dividend of 25 cents and were the same as paid in 1939.

Net earnings of the company before taxes were $206,500 (8.2%) higher than in 1939, Thomas B. McCabe, president of the company, stated in his annual message to shareholders. Federal and State income and capital stock taxes in 1940 were higher by $355,700, or 56.8% than in the previous year, he pointed out. This increase in taxes was due primarily to a higher Federal Income Tax rate and to the new Federal Emergency Excess Profits Tax.

Net sales of $20,397,720 for the year established a new high annual record and were 10.2% greater than the previous year. Thus far in 1941 sales have been gratifying, January shipments having been approximately 21 per cent higher than January, 1940.

Pulp Supplies of Company Assured

Recalling that during 1940 the company had acquired the Coos Bay Pulp Corporation and the Anacortes Pulp Company, which together have a rated annual capacity of 52,000 tons of pulp, Mr. McCabe pointed out that the total pulp expected to be obtained from subsidiaries and from Brunswick Pulp and Paper Company, in which Scott Paper has a one-half interest, will represent approximately 60 per cent of the company's 1941 requirements.

Additional supplies of pulp have also been covered by contract from established domestic and Canadian suppliers. Total 1941 pulp requirements are on hand or are available from these several sources.

Commenting on the new lower prices on ScotTissue, Waldorf and ScotTowels for kitchen use, William F. Mohan, first vice-president of Scott Paper Company, in a notice to the trade, states there are three principal reasons why such steps are possible for his company. . . . 1. "Steadily increasing volume of sales, reaching a new record in 1940. 2. "Efficiencies secured in manufacture. 3. "New sources of raw materials."

Improvement of Line Planned Years Ago

Mr. Mohan traces the current price reduction and quality improvement to a carefully planned program inaugurated four years ago by Scott Paper Company. During this period Scott Paper Company installed three new modern, high speed paper machines of special design to handle the increased sales volume; six other huge machines were rebuilt and the same program of modernization was applied to other phases of the manufacturing process and auxiliary services.

While the execution of the manufacturing improvement program was progressing the company also intensively developed its raw material sources. Mr. Mohan recalled that in 1937 a pulp plant at Brunswick, Ga., was built in conjunction with another concern and this year was enlarged. He pointed out that other purchases by Scott include the Coos Bay Pulp Company, at Empire, Oregon, and the Anacortes Pulp Company, at Anacortes, Washington.

"These pulp sources, in addition to our mill in Nova Scotia, now give us greater control over our supply and quality of raw materials," Mr. Mohan said. Consumers of America will be told of the lower price and increased quality of ScotTissue through the medium of a series of advertisements featuring the now famous ScotTissue Twins, "Softie" and "Toughie." This campaign will start in the national magazines early in March.

William Clarke Mason, senior partner of the law firm of Morgan, Lewis & Bockius, has been elected a director of the Scott Paper Company, Chester, Pa. Mr. Mason graduated from the University of Penn-

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New Badger Mills Building Nearly Finished

Sheeters, Cutters and Other Finishing Room Equipment Now Being Installed In New $75,000 Air-Conditioned Building of Badger Mills — Congressman Opposes New Legislation — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 24, 1941—It is expected that the Badger Paper Mills will move into its $75,000 new building about March 1. Construction has been in progress since last September by the Edward H. Meyer Construction Company of Oshkosh, Wis. The first floor will be entirely for storage and the second floor will be used for a finishing department, including sheeting, cutting, trimming, packing and wrapping.

Included in the new equipment will be a 120-inch sheeting log, two additional sheeters, three cutters and electric cranes. The new building will replace a finishing department housed in an old sawmill. The old building will be converted into a warehouse.

Concrete construction was used throughout the new building, and its front is of brick. Air-conditioning and a sprinkling system have been installed, together with humidity control to keep paper in storage at the right temperature and prevent it from stretching or buckling. Glazed windows and aluminum-painted ceilings provide excellent light. Elevators are located at each end, and a railroad loading platform was built across the entire rear.

About 100 men will be transferred to the new quarters. The finishing department will be shut down for two days to make the move, but will not affect other operations.

Badger Mills Reelect All Officers

All directors and officers of Badger Paper Mills, Inc., Peshtigo, Wis., were reelected at the company's annual meeting held at the company's offices last week. They are: E. A. Meyer, president; C. W. Hoeper and H. L. Haslanger, vice-presidents: J. P. Pulliam, Milwaukee, Wis., chairman of the board; J. D. Leginer, Milwaukee, secretary-treasurer; Frank J. Lauerman, Marinette, Wis., and John B. Angle, Milwaukee, directors.

President Meyer stated in his report that "the net profit for the year of 1940 was very much affected by the increase in the normal federal income tax rate, also the newly enacted defense tax and excess profits tax. Had the income tax rates for 1940 remained the same as the previous year, our net income would have increased $35,000 over 1939. In other words, even though our net income is practically the same as the previous year, our tax liability for 1940 is $116,000 as compared with $73,000 in 1939." The company showed an operating profit of $355,037.13 last year with a net income of $252,236.57.

Wisconsin Mills Get U. S. Contracts

Three Wisconsin mills have been designated sources of supply for paper under contracts awarded by the government printing office at Washington, D. C. Whiting-Plover Paper Company, Stevens Point will supply paper under a $99,205 contract awarded the Baxter Paper Company, Baltimore, Md. The Neenah Paper Company, Neenah, Wis., will share under a contract of $188,321 awarded the Marquette Paper Company, Chicago. Fox River Paper Corporation, Appleton, Wis., shares a $119,216 contract awarded the Graham Paper Company, St. Louis, Mo.

Falls Mill Increases Pulp Output

Because of the increasing demand for domestic pulp, the Falls Pulp and Paper Company, Oconto Falls, Wis., has stepped up production and now has 225 employees on its payroll. The mill is producing sulphite pulp, and also has developed a line of toilet and towel products. The resumption of operations after it was taken over by a new organization has revived an important source of employment for the community. Officers of the company are Clayton Ewing, president, Marshall H. Smith, vice-president, and E. N. Forkin, secretary-treasurer.

Hold Safety Meeting at Menasha

The second of a series of safety meetings held jointly by paper mills, converting plants and other industries of Neenah and Menasha, Wis., Tuesday evening, February 18, at the Menasha high school was divided into sectional meetings for the discussion of problems associated with various operations. E. A. Page, safety director of Kimberly-Clark Corporation, was the general chairman.

A. D. Wilkinson of Kimberly-Clark Corporation, spoke to employees of converting and manufacturing divisions, with Joseph Zelinski of Wisconsin Tissue Mills, and Wesley Cook of Kimberly-Clark serving as co-chairmen.

Opposes New Legislation of Paper Industry

Congressman Reid F. Murray of Waupaca, Wis., is one of the defenders of the paper industry against legislation now before the House agriculture committee, of which he is a member, calling for an investigation of alleged wage and hour violations. An appropriation of $25,000 is sought for the purpose.

"The criticism seems to be pointed against southern mills which have grown up rapidly during the past four years," Congressman Murray declares. "These mills have sublet the production of pulp on a cord basis and thus circumscribed the rules of the wage and hours law."

While he believes there is "some justification" for complaint in the pulp and paper industry where those working in the paper mills receive an average of about 60 cents an hour, while those actually cutting the trees for the pulp receive between 10 and 20 cents per hour, according to the Labor Department figures as reported to him, he is, nevertheless against the current legislation.

"We should be careful not to harass business at this time when there are so many matters of national and international importance," the congressman explains.

An increase in pay for workers in the pulp and paper industry should be considered only in the light of tariff protection for the industry, Congressman Murray said further.

Canada's Forest Industries a Great Asset

Head of Canadian Forestry Association Declares Wealth In Timber Lands Important To National Economy—Canadian Pulp and Paper Association Volunteers To Extend Cooperation In Conservation.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 24, 1941—At the annual meeting of the Canadian Forestry Association here, a letter was read from F. G. Robinson, president of the Canadian Pulp and Paper Association, expressing the interest and co-operation of the association in the work being carried on throughout Canada for the conservation of the great wealth of the Dominion. The newly-elected president of the Canadian Forestry Association, G. Percy Burchill, of South Nelson, N. B., described Canada's forest wealth as part of the nation's collateral for the expenditures which must be made in prosecution of the war and stressed the importance of the work for protecting the country's forests and woodland. The following resolution summing up the spirit of the meeting was passed:

Post-War Rehabilitation

"Resolved that the Canadian Forestry Association desires to call to the attention of governments, Dominion, and provincial, the part that forestry should play in post-war rehabilitation.

"Inasmuch as over one-third of the land area within provincial boundaries is suitable only for timber growing, the prosperity of our forest industries must always be an important element in our national economy.

"A continuous supply of raw materials for these industries can only be secured through protection and wise use of our forests. There is need for improvements in our forests for protection from fire, insects and disease, for transportation facilities, for timber extraction, and for cultural treatment of forest stands in accordance with scientific forestry principles.

"These lines of work will provide opportunity for employment of returned soldiers, labor released from war industries, and youths coming of employable age, particularly valuable during the difficult years of adjustment from war to peace conditions."

New Brunswick's Heavy Exports

Hon. F. W. Pirie, Minister of Lands and Forests for New Brunswick, states that the total value of the exports of wood products from that province in 1940 was $34,000,000, with pulp and paper contributing more than half.

During 1940, he said, a total of 738,000 cords of pulpwood were manufactured in the six pulp and paper mills and the products in the form of newsprint, kraft, paper board, pulp, etc., exported had a total value of $18,000,000. Sawn lumber exported totalled 275,000,000 feet, valued at $9,000,000. The exports of pulpwood, pitprops and other round timber totalled 590,000 cords valued at $7,000,000.

To these figures must be added the value of forest products used in New Brunswick or shipped to other parts of Canada which is estimated for 1940 at $7,000,000 making the total value of forest products including the products of our sawmills and pulpmills, $41,000,000.

Judgment Reserved in Box Case

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 24, 1941—The Ontario Appeal Court, after a lengthy hearing, has reserved judgment on the appeal of Container Materials Ltd. and 18 other companies making paper products containers who were convicted last fall under the Combines Investigation Act. The hearing on the appeal occupied several weeks and the decision is regarded as of considerable importance as a test case in the enforcement of anti-trust legislation.

The original action against the 19 paper box companies was instituted in June, 1939, and the trial lasted until July, 1940. In handing down judgment September 6, Mr. Justice J. A. Hope stated that the Dominion government had sustained a heavy burden of costs in conducting the trials. Fines totaling $161,500 were levied against the companies involved. The individual fines ranged from $2,500 to $10,000.

The companies accused are as follows: Container Materials, Ltd. and H. J. Badeen; Shipping Containers, Ltd.; Standard Paper Box, Ltd.; Martin-Hewitt Containers, Ltd.; Canadian Wirebound Boxes, Ltd.; Corrugated Paper Box Company, Ltd.; Gair Company, Canada, Ltd.; Hinde and Dauch Paper Company, Canada, Ltd.; Hygrade Corrugated Products, Ltd.; Hilton Bros., Ltd.; Martin Paper Products, Ltd.; Canadian Boxes, Ltd.; Dominion Corrugated Paper Company, Ltd.; Acme Paper Box Company, Ltd.; G. W. Hendershot Corrugated Paper Company, Ltd.; Kraft Containers, Ltd.; Superior Box Company, Ltd.; Wilson Box Company, Ltd.; and Maritime Paper Products Company, Ltd.

Hold Safety Rally at Kimberly

Harry Guilbert, director of the bureau of safety and compensation for the Pullman Company, Chicago, Ill., was the principal speakers at a safety rally at Kimberly, Wis., February 13, attended by employees of the Kimberly-Clark Corporation mill. His address dealt with safety and "good housekeeping" in industrial plants.

Approximately 400 attended the meeting. J. T. Doerfler, manager of the Kimberly mill, gave the address of welcome. A safety movie, "More Dangerous Than Dynamite," was shown, and entertainment included selections by the Kimberly high school band.

Workers in the laboratory and testing stations of the Kimberly mill this month completed twenty-three years of operation without a lost-time accident, and hope to hold a silver jubilee celebration at the end of 25 years in 1943. Glen Strieby is the technical director, and George R. Gerritts and Cornelius F. Crowe are department heads. The department averages eight employees in the laboratory and twenty in various testing stations.

Their work exposes them to many possibilities for accident.

Longer-Wearing Valve Stems

The Hancock Valve Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn., announces a new, longer-wearing alloy, Hancodur, for valve stems and bonnets. This self-lubricating alloy was developed expressly for use in Hancock Superfinished "500 Brinell" Bronze Valves. It is claimed by the makers that

NEW HANCODUR VALVE STEMS

repeated breakdown tests indicate that these new Hancodur valve stems and bonnets have exceptional wearing qualities.

It is stated that Hancodur stems have a tensile strength of 90,000 pounds per inch plus a high self-lubricating characteristic that resists galling and wear. The makers say that due to increased production and low manufacturing costs, their full line of Hancock Superfinished "500 Brinell" Bronze Valves are now furnished with Hancodur stems and bonnets at no increase in price. An interesting bulletin giving complete details may be had for the asking.

Blancol for Paper Making

Due to the wide acceptance of Blancol Conc. powder the General Dyestuff Corporation, 435 Hudson street, New York, has deemed it advisable to issue a circular enumerating the product's outstanding properties.

This product comes in a light brown, granular form, produces an amber colored solution, and is soluble in cold water at a maximum concentration of one part Blancol to two parts water.

Blancol Conc. powder is not in the true sense a dispersing agent as applied in the paper industry, although it does have a colloidalizing effect on certain inert materials. It is used principally as a protective colloid which tends to prevent the coagulation of several proteinaceous and resinous materials on the alkaline side. The subsequent acidification with aluminum sulphate precipitates these sizing agents in a finely divided state.

Practical mill runs have shown it to produce excellent results when applied for the following purposes: 1. Improved sizing, 2. Increased filler and fine retention in open systems, 3. Better internal sizing and erasability, 4. Prevention of sticking at press roll, 5. Improved printing qualities, 6. Superior physical characteristics of paper, 7. Retention of basic dyestuffs on bleached pulp, 8. Reduced two-sidedness, 9. Elimination of foam specks and 10. Prevention of pitch coagulation. The circular referred to above may be obtained gratis by addressing the General Dyestuff Corporation.

Start Cellophane Plant at Clinton

CLINTON, Iowa, February 24, 1941—The first Cellophane cellulose film made in the Midwest rolls from the Du Pont Company's new Clinton plant on March 3, according to plans announced by the management.

Some 200 employes will begin work on that date. An additional 300, almost all Midwesterners with no previous experience in the chemical industry, are expected to be employed and trained in their new jobs before the end of August.

Food industries of the Middle West, it was said, will receive the first shipments of new film and thereafter consume the largest share of the Clinton output.

Officials emphasized that the plant is a commercial operation exclusively and incapable of being converted to "any purposes other than that for which it was originally designed, namely, the manufacture of Cellophane cellulose film."

This is the fourth Cellophane plant built in America since Du Pont's large-scale introduction of the film here from France in 1924. The price was then $2.65 a pound and the sparkling wrapping made from chemically transformed spruce and hemlock trees was little more than a scientific curiosity. A better film of the same type now is sold for 33 cents a pound, while moisture-proof varieties sell for 41 cents a pound.

The Clinton operation, officials said, is the first situated west of the Mississippi and also the first that is completely disassociated from the manufacture of viscose rayon, a companion cellulose product.

Heinn Paper Sampling Device

A new low cost paper sampling device which is being introduced to paper jobbers and manufacturers by the Heinn Company, Milwaukee, Wis., was shown in New York during "Paper Week." Called the "Sample-Scope," it consists of a series of looseleaf catalogs in which paper samples are grouped for quick and easy reference. These are arranged on a small, portable stand which can be placed in a paper buyer's office.

This feature not only adds display value to a jobber's samples, but, according to the company, it also has the psychological effect of inviting reference and thus making it easy for a customer to buy.

One of the greatest drawbacks to the present system of placing paper samples in cabinets, claims the company, is that samples are taken out and then misfiled or lost when the user is finished with them.

The "Sample-Scope" eliminates this difficulty and at the same time enables buyers to make stock and color comparisons of a jobber's entire line without having to refer to individual files and swatch books.

Paper Industry Ranks Ninth

WASHINGTON, D. C., February 24, 1941—The paper and paperboard industry is the ninth largest in the United States as regards the number of wage earners employed, and is one of the nine industries in the country employing an average of 100,000 or more wage earners, according to latest census figures issued by the Census Bureau. As regards the value of products manufactured, the paper and paperboard industry ranks 10th, and is eighth in the cost of materials.

A Novel and Dramatic Sales Help

A novel and dramatic sales help is now being distributed to the printing trade by the Zellerbach Paper Company of San Francisco through its twenty branch offices from Chicago west. It consists of a hand-made box, designed to represent two small books side by side, entitled respectively "Impressions in Miniature" and "Designed for Selling". Within this cover are concealed a miniature letter-file, a tiny mail box and a card case. These contain a very complete selection of miniature samples of letterheads, envelopes and business cards, each a fine example of typography produced in one and two colors on various types and shades of paper.

In order to assure modern and artistic typographical treatment, all typography was done under the supervision of the Type Division of American Type Founders. The samples thus serve likewise as a specimen folder of the best modern and classical ATF type faces shown in actual use.

While the specimens are but half standard size, they are perfectly reproduced and represent a wide variety of printing styles, as well as treatments suitable to many different types of business. Included with the specimen business cards is a set of "blanks", i.e., extra cards showing color spots and type ornaments, but without copy, which enable the printing salesman to show the customer just how his business card will look if laid out according to the specimen.

The idea of this miniature kit originated with the Miniature Rooms at the Golden Gate International Exposition where the appeal of tiny replicas of fine furniture and other products was clearly demonstrated. The purpose of the kit is to give the printing salesman a new approach to the old story of fine business forms. Its novelty attracts immediate attention and its small size makes it convenient for the salesman to carry and to display in the customer's own office.

Simplify Practice on Boxes

Simplified Practice Recommendations R126-41, Set-up Paper Boxes; R127-41, Folding Paper Boxes; R128-41, Corrugated Fiber Boxes; and R129-41, Notion and Millinery Paper Bags, have been accorded the required degree of acceptance, and approval for promulgation, according to an announcement of the Division of Simplified Practice, National Bureau of Standards.

The changes made in the 1931 editions of these recommendations, which concern sizes, materials, and construction, are based on a survey of recent experience of department and specialty stores, with respect to the packaging and wrapping of commodities. The study was made cooperatively by the Committee on Simplification and Standardization of the National Retail Dry Goods Association, the several Standing Committees, and the Division of Simplified Practice.

The proponents believe that these recommendations will prove advantageous to all concerned, and that appreciable savings should result from adherence to the recommendations.

Until printed copies are available, free mimeographed material on these subjects may be obtained upon request, from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

A. L. Whiteside Opens New York Office

The following announcement, which is self-explanatory, has just been sent out:

"In order to establish a convenient medium of contact between Black-Clawson-Shartle-Dilts and the various mills throughout the East, we are announcing the opening of a new office, located at 90 West First street, New York City. This branch will enable us to render even more efficient service to the many pulp and paper plants in that part of the country.

"Our representative in charge will be Arthur L. Whiteside, pictured above. Mr. Whiteside brings with him an abundance of experience and knowledge

A. L. Whiteside

gained during almost 20 years of associations with a wide variety of manufacturing and research organizations.

"After studying Mechanical Engineering at Ohio State University from 1914 to 1917, his first important connection was with the Hill Clutch Company, which specializes in transmission and agitator equipment in the pulp and paper industry. He was successively estimator, sales engineer, chief draftsman and New York manager for this firm.

"In 1928 Mr. Whiteside entered the field of independent sales engineering, undertaking research for the Thomas A. Edison Industries and affiliated companies and also acting as patent investigator.

"Mr. Whiteside brings to our customers years of experience gained in solving actual mill problems. He can be credited with development of tubular agitators for batch chlorination and adjustable pitch agitators applied to pulp and paper mill agitation. More than 130 such installations have been made under his guidance. Such experience greatly augments the knowledge we are in a position to apply to your problems."

Former Paper Maker Gets 13 Ft. Letter

Camp Hulen, Tex., February 24, 1941—Sergeant Manford Niel, of Battery F. 197th Coast Artillery, here, received a letter 13 feet long from his former co-workers at the Cascade Mill of the Brown Company, in Gorman.

P & H Popular-Price Electric Hoist

A full electric wire-rope hoist to be sold at popular prices is announced by the Harnischfeger Corporation of Milwaukee, manufacturers of P&H overhead handling equipment. Known as the P&H Zip-Lift, the new hoist has been designed for the most flexible handling service in all lines of industry. It is light enough for a man to carry; it can be mounted rigid, or on hook or trolley—with mountings interchange-

P & H Zip-Lift Hoist Mounted on Trolley

able when desired. It operates with pushbuttons, and is powered from an ordinary light circuit.

Features of the P&H Zip-Lift include double brakes for safety of loads, automatic limit switch to prevent loads from rising too high and jamming hoist drum, and fully enclosed construction making the unit absolutely impervious to dust, fumes, acid, or weather conditions.

Because it is a genuine wire-rope hoist, the P&H Zip-Lift permits a wide latitude of side pull—an advantage in reaching beyond aisles, etc., for loads. Furthermore, the pushbutton cable is anchored to the hoist frame itself, so that the operator can pull the hoist along a trolley by means of the cable itself.

The hoist will find wide use in industries where heavy bales, trays, or coils are handled. It can be put to use in shipping and receiving zones, for interdepartmental carrying, or for raising and positioning loads for processing. It is available in capacities of 250, 500, 1000 and 2000 pounds, and will be sold through industrial distributors.

Catalogue of Paper Literature

The Institute of Paper Chemistry, affiliated with Lawrence College, Appleton, Wis., has issued a bulletin comprising a catalogue of 622 pages on the paper making literature in its library. The book forms a convenient reference list and includes periodicals, books and pamphlets, authors, index and a subject index.

The publication is issued by The Institute of Paper Chemistry, Appleton, Wis., at $5 a copy.

SCOTT CO. MAKES GOOD REPORT

(Continued from page 5)

sylvania Law School in 1903 and practiced law in Philadelphia since that date. He has been a member of the firm of Morgan, Lewis & Bockius since 1922. He is Chancellor of the Philadelphia Bar Association and a director of the Philadelphia National Bank. The election of Mr. Mason fills the vacancy on the Board of Directors created by the death of Clement B. Wood who was also a partner of Morgan, Lewis & Bockius.

Receives Order for 100 inch Fourdrinier

Moore & White Company report the following on order and in process of completion: A 100" wire Fourdrinier high speed paper machine for making light weight paper to operate at 1000 feet a minute; also a high speed heavy type 2-drum super calendered re-winder for S. D. Warren Company, Cumberland Mills, Maine.

Penn Paper Stock Co. in New Quarters

The Penn Paper and Stock Company is now located at its new warehouse at 1112-1118 Washington avenue, Philadelphia, having moved from 1025-1031 North Front street where they had been located for some years. The new location is right in the heart of Philadelphia and affords 100,000 square feet of floor space together with railroad sidings and new separate office building and close proximity of water facilities. Large new and additional equipment has been installed to make the company's plant one of the most up-to-date paper stock establishments in the entire country. The new telephone numbers are: DEWEY 0500 on the Bell system, and RACE 4041 on the Keystone system. The Penn Paper and Stock Company, founded in 1903 by the late William J. McGarity, is one of the foremost waste paper concerns in the United States; it handles a tremendous tonnage of material and has branches in Baltimore and Washington. David M. Dickson manages the business.

Albert H. Standley Dead

Downingtown, Pa., February 24, 1941—Albert H. Standley, president of the Downingtown Manufacturing Company and associated with the company since 1906 died February 10, following a long illness. He was educated in the public schools of Watertown, N. Y., and began his career as a machinist for the old Watertown Steam Engine Company. After several years with that concern he became a mechanical engineer for the Bagley & Sewell Company, remaining with that concern for about ten years. About 1906 he severed connections with that firm and moved to Downingtown to take the position as chief engineer for the Downingtown Manufacturing Company, manufacturers of paper machines and suction rolls. A few years later he obtained an interest in the concern and was made superintendent and vice president. Eventually, he gained control of a majority of the stock in the company and became president which office he held for many years. The principal survivors are his wife and four brothers.

Lumberjacks Compensation Discussed

MONTREAL, Que., February 24, 1941—Considerable discussion has just taken place in the Quebec Legislature covering the pay and working conditions of lumberjacks employed by lumber and pulp and paper companies in Quebec Province, the upshot of which is that no action is likely to be taken by the government for any further increase in pay at the present time, the Minister of Forests intimating that the industry has sufficient burden already. The Minister said that one of the three orders-in-council recently passed by the Government assured forest workers their best wage in 15 years. He pointed out that there were 70,000 such workers scattered throughout Quebec, and the fact that they worked in such far-distant points made it difficult to apply collective labor agreements between themselves and their employers.

He deplored the number of "professional jumpers" who still racketeered in lumber jobs, remarking that in one week-end recently 203 men left for a lumber camp, their fares and food paid for by a private company, and that 185 of them came home at the end of two days. "We want to protect the lumberjacks," Mr. Cote stated, "but, I respect honest capital, and the industry has rights, too, that must be looked after. Companies have their right to protection and if we are to dictate what wages they must pay, we are just driving that much more capital into the ground."

M. I. T. TAPPI Alumni Meet

The graduates of the Massachusetts Institute of Technology attending the annual meeting of the Technical Association of the Pulp and Paper Industry held a luncheon get together at the Technology Club of New York. R. G. Macdonald, secretary of TAPPI presided as chairman and introduced those present to the assembly. George E. Dandrow of the Johns Manville Company and president of the Technology Club gave a brief outline covering the Club's facilities. The club is operated jointly by the M. I. T. and Williams College Alumni. Among those present were the following: Allen Abrams, F. W. Adams, A. M. Altieri, Raymond L. Arnett, Harold W. Bialkowsky, Roger B. Brown, John Buss, S. Clayman, H. D. Cook, Howard M. Cyr, C. G. Dandrow, Pierre Drewsen, Sax Fletcher, J. J. Healy, Jr., Parker B. Holden, A. C. Lamoureux, Alan R. Lukens, R. G. Macdonald, Frank Maguire, R. D. McCarron, D. W. McCready, F. A. Olmsted, John L. Parsons, R. Byram Porter, Jr., Robert J. Proctor, Wm. E. Rand, John G. Rote, Jr., Paul J. Shirley, Jr., Roscoe H. Smith, William F. Talbot, John C. Trahey, Robert W. Van Kirk, Jr., C. A. von Ende, Roy P. Whitney, and W. S. Wilson. Allen Abrams, Marathon Paper Mills Company, was elected chairman for the ensuing year.

Ohio TAPPI to Meet

The Ohio Section of the Technical Association of the Pulp and Paper Industry will meet at the Manchester Hotel, Middletown, Ohio, on Thursday, March 6. J. C. Varkala, representative of Amco International in Paris, France, will talk on "American Civilians in the War Zone," and E. A. Phomee of the Bulkley, Dunton Pulp Company will show the Soundview Pulp Company movie of Pacific Coast lumber and pulp mill operations. The annual election of officers will also be held.

Want Restrictions Lifted

WASHINGTON, D. C., February 24, 1941—Papermakers in Lancashire, England, have given support to a suggestion from a number of leaders in the industry that the paper controller should lift the restriction at present imposed and allow manufacturers to turn out what paper they can from available home-produced raw materials.

It is claimed that the country's entire paper requirements, which are much reduced because of war conditions, could be manufactured from home-produced materials and thus alleviate present conditions in the paper industry.

The paper trade does not suggest that the restrictions placed on the purposes for which new supplies of paper are required should be removed, but that the limitations as to quantity and quality of paper which can be manufactured should be modified to allow manufacturers to make use of available domestic materials. The rationing of paper to printers and other consumers could then be made less severe.

Now Pacific Paperboard Co.

The Pacific Straw Paper and Board Company of Longview, Wash., has changed its name to the Pacific Paperboard Company. The officers are Frank B. Mitchell of Portland, president; Arthur C. Zimmerman, vice president and E. E. Flood of Seattle, secretary-treasurer. Arthur C. Zimmerman, who has been elected vice president and manager, has for many years been superintendent of the plant. Mr. Zimmerman is to be assisted at Longview by T. J. Kennedy and Hayes Parr, and by Harry Springer of Seattle, sales manager.

West-Moore Nuptials

Clarence J. West, Jr., of Appleton, Wis., and Miss Elizabeth Moore, also of Appleton, are to be married in May. Their engagement was announced last week at a tea given by Miss Moore's mother. Mr. West is a son of Dr. C. J. West, editor of publications for the Institute of Paper Chemistry at Appleton. He studied for two years at Virginia Polytechnic Institute, Blacksburg, Va., and completed his work at George Washington University, Washington, D. C. He is associated with Kimberly-Clark Corporation at its mill at Kimberly, Wis.

Paul Browne Dead

RHINELANDER, Wis., February 24, 1941—Paul Browne, 82, secretary of the Rhinelander Paper Company since its organization in 1903, died February 13 at his home following a heart attack. He was born at Waupaca, Wis., and came to Rhinelander in 1888. He practiced law and conducted an insurance business, ranking among the earliest in this field in northern Wisconsin.

Charles Banks Called To Active Duty

A farewell dinner was given at Hotel Appleton, Appleton, Wis., February 12 for Charles Banks, development engineer at the Lakeview mill of Kimberly-Clark Corporation, with 50 employees attending. He is a first lieutenant in the army reserves, and has been called to active duty with the signal corps in Florida.

Bagley & Sewall Get Big Order

WATERTOWN, N. Y., February 24, 1941—Announcement is made here that the Bagley & Sewall Company has received a large contract for paper making equipment from the Industrias Klabin do Parana, Sao Paulo, Brazil. The concern is among the largest corporations in South America and the manufacture of paper is only one of its many extensive activities in Brazil. The contract received by the local company includes a brand new 192-inch Fourdrinier paper machine with a capacity of approximately 150 tons of newsprint daily; a reconditioned 120-inch six cylinder board machine with a capacity of 50 to 70 tons of board paper per day and a rebuilt cylinder machine for the production of various grades of tissues. Delivery is to be made within the next eight months. Engineers of the concern have been in this country several months completing arrangements for placing the contract besides traveling extensively with a view to studying paper making methods. The new 192-inch newsprint machine is to follow specifications which call for the latest in modern design and construction, making the machine capable of fast speed. The board machine is a complete machine and is to be reconditioned at the local plant for later shipment to Brazil. The Brazilian contract is only one of many South American orders that the local concern has received in recent months. It was also stated that an engineer is now in Australia completing the installations of a large board machine which was shipped the latter part of 1940. A full force of about 400 men are now employed full time at the local plant and officials believe that the year will witness improved business conditions. Abe Cooper was reelected president of the Bagley & Sewall Company at the annual meeting and Carroll L. Thompson will continue as secretary and treasurer. The officers with Harry Markowitz and Norman Weltman, of Syracuse, will comprise the board of directors.

Johnstone Slitter and Rewinder

A new, modern development is announced to be embodied in the Johnstone 12 and 14 score cut slitter and rewinder, manufactured by the Johnstone Engineering and Machine Company, Downington, Pa. These machines are of entirely new design and utilize ball or roller bearings wherever possible. The tool steel slitter lever provides great strength with long wearing qualities. The ball bearings, on which the slitter wheel rotates, are completely sealed from dust and loss of lubricant.

Other advantages include underpoint springs to provide stability to the slitter unit in a vertical position. The Bommerang pressure lever is another new feature, always returning the slitters to the same adjustment by throwing the lever. The easy-working Obedient clutch gives the operator complete manual control with safeguards against sticking.

The winding drum is at least 50% oversize, as are the bevel gears of the pressure roll drive. A modern guard covers and protects all drive gears. Operation is also simplified by the one-handed pressure roll elevator, for raising or lowering the top pressure roll. The hinged, split brake straps and mill roll clamp simplifies roll changing. The Johnstone 12, slits and rewinds board up to 20 points, taking rolls up 62 inches wide. The Johnstone 14, handles boards up to 40 points, and takes rolls up to 82 inches wide.

Indianapolis Outlook Good

INDIANAPOLIS, Ind., February 24, 1941—All signs point to a good first quarter in the local paper market. The last week showed firmness with all lines moving nicely. There were no apparent dull spots in the trade. Prices are firmly held, no indications of drastic changes are seen, and the outlook for spring in many lines is especially bright.

Fine papers last week moved steadily. A good demand was seen for books, covers and ledgers and prices showed no change. Demand this quarter from all present indications will be ahead of last year.

Building paper demand the last week slowed up somewhat due to severe weather. However, since the first of the year there has been a steady demand and the jobbers are not worried. The volume is expected to increase rapidly from now on. The same applies to roofing papers, with firm prices in both.

Newsprint demand was about the same last week as it has been since the middle of January. Wrapping paper and bags and krafts of all kinds are moving well. The wrapping paper and bag lines are profiting from greatly increased retail business in this area. Prices showed no change, but are very firm.

Box demand continued good with an ever-widening base. Factories in this area, both for small boxes and for the larger knocked-down sizes are working steadily. Warehouses are not overstocked and many are profiting from increased demand from defense industries.

A slight increase was seen in twine demand last week, with better prospects when the weather breaks.

Inquiries are being made now for summer specialties, but thus far there has been no noteworthy call. Many new deals are being prepared to tempt the retailer.

Lower grades of waste paper are in demand, but other grades are dull. Prices in the list showed no change. The rag market continued dull also. Mill demand is not heavy.

New Literature

A folder on the Borncraft sheet finishing machine has been issued by A. E. Marconetti, Inc., 15 East 26th street, New York. It describes the Borncraft machine for processing board stock from .012 to wallboard thickness. Machines are in operation handling stock in widths from 40 to 66 inches in sheets and up to 78 inches wide on stock in rolls.

The Johnstone 12 and 14 score cut slitters and rewinders are described in Bulletin No. 241, issued by the Johnstone Engineering and Machine Company, Downington, Pa. It covers the fifteen major advantages of these newly designed machines for handling boards from 20 points to 40 points in thickness, from 62 inches to 82 inches wide and operating at a minimum speed of 700 feet per minute and a maximum speed of 1500 feet per minute.

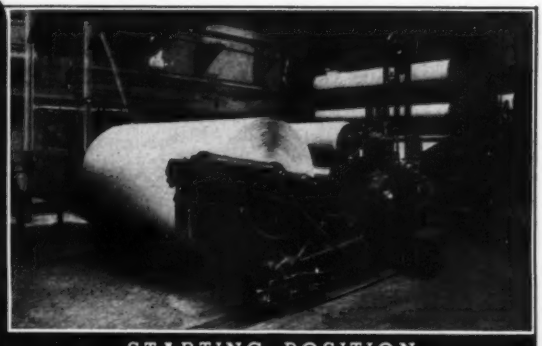
Rocking contact voltage regulators, Type VD, are discussed in Bulletin B6137, issued by the Allis-Chalmers Manufacturing Company, Milwaukee, Wis. It describes how these regulators may be applied to direct current problems in paper mills and includes wiring diagrams. It is of special interest to engineers having applications involving control of voltage, current, speed and tension in connection with direct current machines.

BELOIT

BOARD MACHINE

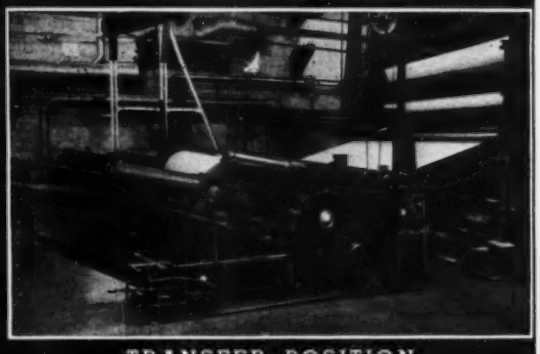
Reel

PATENTED



STARTING POSITION

FINAL WINDING POSITION



TRANSFER POSITION

DESIGNED FOR VERY HEAVY DUTY—TO WIND UP TO 78" DIAMETER ROLLS.

AIR PRESSURE, INDEPENDENTLY APPLIED TO FRONT AND BACK SIDES OF REEL SPOOL, MAINTAINS CORRECT WINDING CONDITION FOR GOOD ROLLS.

AIR PRESSURE CAN ALSO BE USED TO RELIEVE THE WEIGHT OF THE ROLL BEING WOUND.

NO BROKE WHEN CHANGING SPOOLS.

CAN BE INSTALLED ON PRESENT MACHINES.

THE BELOIT WAY IS THE MODERN WAY

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

BELOIT IRON WORKS

BELOIT
WISCONSIN

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending February 26, 1941

	High	Low	Last
A. P. W.	1⅝	1⅝	1⅝
Armstrong Cork Co.	30¼	29¾	30¼
Celotex Corp.	9⅛	8	9
Celotex Corp., pf.	69	69	69
Certain-Teed Products Corp.	4⅛	3⅞	4⅛
Certain-Teed Products Corp., pf.	28¾	26¾	28½
Champion Paper & Fibre Co.	19	18½	18½
Champion Paper & Fibre Co., pf.	....	....	....
Congoleum-Nairn Co.	18¼	17¾	18¼
Container Corp. of America	14½	13⅞	14½
Continental-Diamond Fibre Co.	8⅛	7½	8⅛
Crown-Zellerbach Co.	13½	12⅞	13½
Crown-Zellerbach Co., pf.	87¾	87½	87¾
Flintkote Co.	13⅜	12¾	13½
Robert Gair	1¾	1½	1¾
Robert Gair, pf.	15	14¾	14⅞
International Paper & Power	13¼	11⅞	13⅜
International Paper & Power, pf.	63⅝	58	63½
Johns-Manville Corp.	58¾	57¼	58½
Johns-Manville Corp., pf.	127	126	126
Kimberly-Clark Corp.	32	32	32
MacAndrews & Forbes,	....	....	....
MacAndrews & Forbes, pf.	135⅜	135⅜	135⅜
Masonite Corp.	25¼	24¾	25¼
Mead Corp.	8	7½	7¾
Mead Corp., pf.	68	68	68
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	14	13¼	14
Rayonier, Inc., pf.	26	26	26
Ruberoid Co.	16½	15⅞	16½
Scott Paper Co.	36	36	36
Scott Paper Co., pf.	113¼	113	113
Sutherland Paper Co.	20¾	20⅝	20⅝
Union Bag & Paper Corp.	10½	10	10½
United Paperboard Co.	2⅞	2¾	2⅞
U. S. Gypsum Co.	62⅜	61¼	62¼
U. S. Gypsum Co., pf.	174	174	174

New York Curb Exchange

High, Low and Last for Week Ending February 26, 1941

	High	Low	Last
American Box Board Co.	4⅜	4⅜	4⅜
Brown Co., pf.	....	....	....
Great Northern Paper	40	39	40
Hummel-Ross Fibre Corp.	5⅞	5¼	5¾
National Container Corp.	11½	11	11½
St. Regis Paper Co.	2	1⅞	2
St. Regis Paper Co., pf.	72	70	72
Taggart Corp.	3	2⅞	3

Bartgis Bros. Make Good Report

E. H. Lupton, president, in submitting his annual report to stockholders of the Bartgis Brothers Company says:

Net sales totaled $927,988.49 which is approximately 3 per cent decrease as compared with 1939 and approximately 17 per cent increase over 1938.

The net income after all charges (Depreciation and maintenance charged against operations amounted to $89,266.12) but before deducting Federal and State income taxes amounted to $71,515.78. After deduction of all charges and Federal and State income taxes the net income amounted to $52,500.75. Preferred dividends amounted to $10,967.20 leaving $41,533.55 equal to 38c per share on the 108,052 Common shares outstanding on December 31st, 1940. This compared with 52c per share for 1939 and 51c per share for 1938.

Preferred dividends have been paid regularly and a common stock dividend was paid to the amount of $10,805.20 during the year.

The tons of paperboard produced were 14,632 tons, of which 14,357 tons were converted into folding cartons. We produced 16,665 tons in 1939, 15,231 tons in 1938, 14,320 tons in 1937 and 12,088 tons in 1936. While the paperboard production in 1940 did not show the successive yearly increase as previously it was mostly due to producing a better quality of board, of lighter caliper for high grade multi-color cartons. The 1940 average gross sale of finished board was $63.42 per ton as against $57.25 per ton for 1939 and $51.94 per ton for 1938.

The net profit before all estimated Federal and State income taxes for 1940 per ton of board produced was approximately $4.85 per ton compared with $5.10 per ton in 1939, $5.22 per ton in 1938 and $9.75 per ton in 1937. The first six months of 1940 were profitable months but the last six months of the year found us up against the keenest competition that we have experienced. During the past few weeks there has been quite an improvement and at the present time our backlog of orders is greater than for several months past.

All of our raw materials required for process, part of which were formerly obtained from Norway, Sweden and Finland, are now easily available through domestic sources and there has been no appreciable advance in the costs of these raw materials for several months.

Bird & Son Earns 92c

The report of Bird & Son, Inc., East Walpole, Mass., for the year ended December 31, 1940, shows net profit of $631,005 after charges, equal after preferred dividends to 92 cents a common share. This compares with 1939 net of $757,609, or $1.12 a share.

At the end of 1940 current assets totalled $7,649,978, current liabilities were $1,007,537, leaving net working capital of $6,642,441, compared with $6,587,613 on December 31, 1939.

Chairman Bird states to stockholders in part as follows: "Our earnings for the year 1940 were less than those of 1939 although our net sales were 3.36% greater. This was due largely to the demoralized market situation of one of our major lines. Severe competitive price situations still exist in most of the lines of merchandise which we manufacture."

United Paperboard Nets $24,875

The United Paperboard Company and subsidiaries for the six months to November 30, reports a net profit of $24,875, equal to $7,731,211 in 1939. Balance-sheet items as of December 31 compare as follows:

The company spent $469,540 for capital purposes last year, of which $308,453 was for projects needed for continued operation, while $161,087 went for improvements. Due to refinancing, annual interest charges on funded debt have been reduced to $189,625 from $493,350 as of December 31, 1939. Annual sum for retirement of indebtedness under the new set-up is $400,000 for a period of fifteen years, after which any remaining balance becomes due.

Brown Co. Earnings Up

Serge Semenenko, chairman of the reorganization managers of the Brown Company, has announced that consolidated operations of the company and its Canadian subsidiary, Brown Corporation, for the fiscal

year ended on Nov. 30, 1940, showed an improvement of more than $4,000,000 over the previous year, after reserve for income and excess profits taxes but before deferred bond interest.

The statement is based on the sixth report of the trustees, filed yesterday with the Federal Court at Portland, Me., Mr. Semenenko said, adding that progress has been made in working out the many details incident to the consummation of the reorganization plan, subject to the approval of the Reconstruction Finance Corporation.

Consolidated net sales were $24,957,570 in 1940, against $17,560,170 in 1939, according to the trustees' report, and resulted in net income of $3,711,046 after tax provisions but before depreciation and deferred bond interest. Depreciation was $1,545,545, leaving net income of $2,165,501, contrasted with a loss of $1,857,476 on the same basis in 1939.

A. W. P. Nets $89,710

The American Writing Paper Corporation for 1940 reports profit was $89,710, after interest of $131,056 on general mortgage bonds. After $63,496 provision for future possible pulp cost fluctuations, net profit transferred to surplus was $26,214. Net profit for 1939 was $238,749. The 1940 profit of $37,745 on bonds reacquired was credited to earned surplus, compared with $202,035 such profit in preceding year. December quarter: Profit was $25,298. After provision for future possible pulp cost fluctuations aggregating $31,270, there was a net loss for period of $5,972. In December quarter of 1939 company had net profit of $135,182, but with no deduction for interest on bonds, as this latter requirement has been fully met in preceding quarters.

Parraffine Companies Vote Dividend

Directors of The Paraffine Companies Inc. have declared dividends of $1.00 per share on preferred stock and 50 cents per share on common stock. Preferred dividends are payable April 15, 1941, to stock of record April 1, 1941, and common dividends are payable March 27, 1941, to stock of record March 10, 1941.

Kimberly-Clark Votes Dividend

NEENAH, Wis., February 24, 1941—Kimberly-Clark Corporation last week declared its regular quarterly dividend of 25 cents per share on outstanding common stock. It will be payable April 1 to stockholders of record March 12.

Flintkote Nets $1,436,550

The Flintkote Company and United States and Canadian Operating Subsidiaries—For 1940: Net income, $1,436,550, compared with 1939 net income of $1,432,383.

Puget Sound Nets $122,998

The Puget Sound Pulp and Timber Company for January reports a net profit of $122,998 compared with net profit of $77,115 in same month a year ago.

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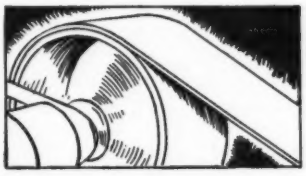
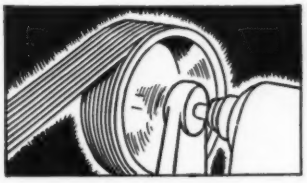


Cincinnati Transmission Belts are making records in every industry. Because of their brilliant performance many plants are equipped 100%.
Ask for details and prices.

CINCINNATI MULTI-V BELTS



New, improved type . . . matched for Multi-V drives . . . they are the same high quality as other Cincinnati Belts, and give the same outstanding service.
Ask for folder and prices.

THE CINCINNATI RUBBER MFG. CO.
CINCINNATI OHIO

CINCINNATI TRANSMISSION BELTS

CONSTRUCTION NEWS

Camas, Wash.—The Crown-Willamette Paper Company, manufacturer of kraft and other wrapping papers, book papers, tissue stocks, etc., has plans under way for new addition to mill, consisting of a four-story unit, to be used for expansion in paper-converting department. Cost is reported over $150,000, including equipment. It is proposed to carry out work in spring. Company is a division of the Crown-Zellerbach Corporation, 343 Sansome street, San Francisco, Calif.

Cleveland, Ohio—The Moser Bag and Paper Company, 2187-89 Ashland road, manufacturer of paper bags and containers, has approved plans for new one-story plant unit in vicinity of present factory, to be 100 x 240 feet, equipped for expansion in general production division, with storage and distributing department, and office facilities. Cost reported over $80,000, including equipment. General contract for erection has been awarded to the A. M. Higley Company, 2036 East Twenty-second street, Cleveland, and work will be placed under way at once. J. W. Little, last noted address, is engineer.

Park Falls, Wis.—The Flambeau Paper Company, manufacturer of manila and other paper stocks, has work nearing completion for new one-story and basement addition to mill, on which erection was begun last fall, as previously noted in these columns, and expects to have the structure ready for occupancy early in the spring. It will be equipped for expansion in digester department. A number of sub-contracts have been let recently for building completion, including roofing to E. D. Chase Company, Oshkosh, Wis. Expansion is reported to cost over $75,000, with equipment. C. R. Meyer & Sons Company, 50 State street, Oshkosh, is general contractor for work.

Covington, Ky.—The Crescent Paper Company, Court street, near Fourth street, manufacturer of paper tubes and kindred paper products, has purchased a one-story industrial building on local site at 113 East Fourth street, and will remodel and improve for new plant. Equipment will be provided for considerable increase in present capacity. It is proposed to have plant ready for occupancy at early date. Paul Seltman is general manager.

Pearisburg, Va.—The Celanese Corporation of America, Inc., 180 Madison avenue, New York, N. Y., manufacturer of cellulose rayon products, has approved plans for expansion in branch mill near Pearisburg, consisting of several one and multi-story units for expansion in cellulose acetate department and other production divisions. Bids have been asked on general contract for erection and award will be made soon. Cost reported over $600.000, including machinery. This is part of a large expansion program to be carried out by company at local mill and other branch plant at Amcelle, near Cumberland, Md.

New Haven, Conn.—The National Folding Box Company, James and Alton streets, manufacturer of folding and other paper boxes and containers, is arranging early call for bids on general erection contract for new addition to plant, recently referred to in these columns. Structure will be one-story, about 50 x 250 feet, located in court area on James street, and will provide for considerable increase in present production facilities. It is reported to cost close to $50,000, including equipment. Fletcher-Thompson, Inc., 1337 Fairfield avenue, Bridgeport, Conn., is architect and engineer.

Brooklyn, N. Y.—The Equitable Paper Bag Company, 47-00 31st place, Long Island City, manufacturer of paper bags and containers, has arranged for lease of one-story building at 1301 Grand street, Brooklyn, owned by the Bossert Terminal, Inc. Structure totals about 10,000 square feet of floor space and will be used for storage and distribution. Immediate occupancy is planned.

Tonawanda, N. Y.—The Robert Gair Company, Tonawanda Division, Clay and Tonawanda streets, Tonawanda, manufacturer of corrugated boxes and containers, has completed plans for expansion and improvements in local plant, including reconstruction of section of works. General contract for work has been awarded to the Industrial Constructors, Inc., Broad street and Allegheny avenue, Philadelphia, Pa., and project will proceed at once. Cost is reported over $50,000, including equipment. Main offices of company are at 155 East 44th street, New York, N. Y. J. A. Warner, last noted address, is company engineer.

Chicago, Ill.—The Sabin Robbins Paper Company, 2719 South Troy street, general paper products, has approved plans for new building at 2716 South Albany avenue, consisting of a one-story structure, about 36 x 50 feet, to be used for storage and distribution. Contract for erection has been awarded to R. L. Brockob Construction Company, 815 South Cicero avenue, Chicago, and superstructure will be placed under way soon. Cost reported about $21,000, including equipment. Edward H. Nordlie, 4825 North California avenue, is architect.

New Orleans, La.—The Flintkote Company, North Galvez street, manufacturer of roofing and building papers, etc., has completed plans for new addition to local mill, to be used for general operations and office service. It will be two-story, reported to cost close to $40,000, including equipment. Bids have been asked on general contract and erection is scheduled to begin soon. Billingsley Engineering Company, Interstate Building, is engineer. Main offices of company are at 50 West 50th street, New York, N. Y.

La Tuque, Que.—The Brown Corporation, 71 St. Peter street, Quebec City, Que., manufacturer of kraft and other paper stocks, is reported planning extensions and improvements in branch mill at La Tuque, including remodeling of portion of plant. Cost estimated over $60,000, including equipment.

Mexico, D. F.—Ministry of National Economy,

Government of Mexico, Mexico, has plans maturing for construction of a Federal-owned mill for the manufacture of cellulose rayon products. Site is being selected. New mill will comprise several large one and multi-story structures for processing and general production divisions, with laboratory, storage and distributing buildings, power house and auxiliary structures. Cost is reported over $1,000,000, with equipment, and it is stated that a portion of investment will be provided by private interests. It is expected to begin work at early date and to have mill ready for service by the end of next summer.

Wausau, Wis.—The National Paper and Chemical Company has been organized to manufacture and deal in paper mill supplies of various kinds. The incorporators are Lloyd L. Dodge, Marshall A. Wiley and Max E. McCotter, all of Wausau.

Wilmington, Del. — The Papercraft Products, Inc., care of Corporation Guarantee and Trust Company, Citizens' Bank Building, Wilmington, attorney and representative, has been chartered under Delaware laws with capital of $10,000, to manufacture corrugated and other paper products.

Praises Paper Industry

High tribute for the vital part played by the pulp and paper industry in the recently concluded campaign of the New York and Brooklyn Federations of Jewish Charities was contained in a final report on campaign activities among 140 trades and divisions issued today by former Supreme Court Justice Joseph M. Proskauer, campaign chairman.

Mr. Proskauer hailed the campaign, conducted on behalf of 116 local hospitals and welfare agencies, as "one of the most successful in the more than two-decades' history of the two Federations."

He particularly praised Morris Gintzler, chairman of the pulp and paper division, and Abe Mazer, Hudson Pulp and Paper Company, co-chairman; and A. H. Cohen, Resolute Paper Products Corporation; Joseph Mazer, Hudson Pulp and Paper Company; Michael Posner, S. Posner's Sons, Inc.; Robert J. Rudnick, Mutual Paper Company; Fred Ruhling, Lily Tulip Cup Corporation; Isaac Schrier, Schrier Brothers; Meyer N. Schwartz, Harlem Paper Products Company; Benjamin I. Sheldon, Gottesman & Co.; Joseph Simon, Ace Paper Company; Jacob Sincoff, Empire Box Board Company; George Stoll, Reliance Paper and Twine Company and Jack Weill, Mutual Paper Company.

"The pulp and paper industry drive was essentially a group effort, of which all in the trade may well be proud," Mr. Proskauer said. "Mr. Gintzler and Mr. Mazer and their devoted campaign associates bore the full brunt of responsibility for its success. For their strenuous labors they have richly earned not only the esteem of their trade associates but that of the community as a whole.

Buys Paper Under Walsh-Healey Act

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 26, 1941—During the week ended February 8, the Government purchased $1,583,600.20 worth of paper and allied products under the Walsh-Healey Act as follows: $11,088.00 worth of bond paper for the Government Printing Office from The Aetna Paper Company, Dayton, Ohio; $29,600.00 worth cartons for War, Ordnance, Philadelphia, from Container Corporation of America, Philadelphia, Pa.; $99,205.00 worth of paper for Government Printing Office from The Baxter Paper Company, Baltimore, Md.; $557,183.70 worth of paper for Government Printing Office from The Aetna Paper Co., Dayton, Ohio; $188,321.00 worth of paper for Government Printing Office from Marquetta Paper Company, Chicago, Ill.; $40,159.00 worth of paper for Government Printing Office from Mathers-Lamm Paper Company, Washington, D. C.; $208,581.00 worth of paper for Government Printing Office from Frank Parsons Paper Company, Washington, D. C.; $119,216.50 worth of paper for Government Printing Office from Graham Paper Company, St. Louis, Mo.; $22,080.00 worth paper towels for Treasury, Procurement, D. C., from West Disinfecting Co., Long Island City, N. Y. ; and $308.166.00 worth collapsible cartons for War, Ordnance, Philadelphia, from Edwin J. Schoettle Company. Philadelphia, Pa.

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Brazil Uses New Pulping Process

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 26, 1941—Industrial circles in Parana, Brazil, are commenting favorably on the announcement regarding the development of new processes for the production of chemical pulp from araucaria brasiliensis or Parana pine. Several experiments are being methodically carried on in the Chemical Institute of Parana not only to establish the qualities of the new product but also to obtain a definite estimate of its cost and regarding possibilities of a prospective industry.

PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 112 February 27, 1941 No. 9

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

CONTROLLED ECONOMY

The sagging stock market has been frequently cited as one indication of the uncertainty facing business. The lack of buoyancy of the securities markets has also been pointed out as a sign that investors and investing institutions hesitate to make commitments because of doubt that their "risk" funds may show even a small profit. This lack of confidence does not seem quite justified. It may be due to other considerations than those mentioned. Very likely some of the fear so vigorously, but often unconvincingly, broadcasted by European belligerent nations, may have clouded the otherwise clear minds of those who invest heavily in American private enterprise. But, three major factors are quite generally viewed with grave concern by many business men. They are the Administration's plans for a controlled economy, the proposed new anti-trust drive, and of course, the expected increase in taxes.

A New Deal essential has long been evident in the acquisition of more power over industry and practically all other commercial activities, including agriculture. This has been termed controlled economy. As the great effort necessary to insure the success of the national defense program demands greater production, the output for civilian needs must be proproportionately decreased. It is estimated that by next summer about 12½% or one-eight of the country's total working energy will be devoted to military needs. This compares with about 7% at this date. This ratio is, of course, very low in comparison to Britain with 60% and with Germany with at least as high a ratio of military production. Expressed in terms of our national income, the ratio of expenditure is something more than $5 billions a year, out of a national income of about $80 billions. Britain is spending about $13 billions a year out of an income of about $22 billions, while Germany is spending about the same. In terms of work hours, we are devoting about ½ hour per working day of 8 hours to produce military goods. Britain and Germany, employing women and children, work about 5 hours per day on military goods.

In viewing the question of a government controlled economy, the new controls over finance are indicated in the steady expansion of Government banking through its various agencies, such as the RFC, USHA and others, including the $1 billion a year for WPA and a like amount for farm subsidies. The power and activities of Government must tend to increase more rapidly in the future. United States expenditures for army and navy equipment in 1941, for example, has been estimated to equal expenditures of 1917-18. To this will be added other Government expenditures, and military orders from Britain. This rapid acceleration in productivity will provide work for thousands now unemployed and wage and salary payments will reach new high records. At the same time, prices will not be permitted to rise out of line and cause inflation.

Another important aspect in this controlled economy is a plan for meeting a sharp decrease in activity as the boom fades. The New Deal conception is for Government to assume over-all responsibility for the nation's economic welfare. It is calculated to control money to provide an adequate supply for investment in Government projects, to use Government power to control prices, and perhaps wages, to insure success of Government investments. Foreign trade control and farm control are also important inclusions in the New Deal controlled economy.

To provide a check upon monopolies, Thurman W. Arnold, Assistant Attorney General of the United States, has prepared a program which he has recommended the TNEC present to Congress. The TNEC, having been at work for two years is nearly ready to prepare recommendations to the House for legislation the committee believe will make industry function more smoothly and still retain the competitive system of our democratic form of government. As certain broad social objectives are deemed necessary by Mr. Arnold, the cost of living would be one of the most important. Food, housing, clothing, drug and medical supplies and a rather large number of household appliances, would be investigated.

With the proposed increase in the Federal debt limit to $65 billions, Congress may increase taxes, it has been argued, to defray appropriations for defense and regular and relief expenditures by the Government, with also the prospect of additional billions appropriated to aid Britain. Thus, higher taxes are scheduled as "must" legislation. A new tax bill will probably be introduced in Congress by May. The

1940 tax returns are now being studied and the steady rise in employment encourages the belief that higher levies may be made without drastic result on individuals or corporations. The proposal for a Federal sales tax has its supporters, although the Administration has not favored this scheme. In expressing opinion that a sales tax is inevitable, proponents of such a tax have pointed to the proposed $65 debt limit and suggested that it may be expedient to raise this debt limit to $100 billions.

But, according to Administration spokesmen, a Federal sales tax is not desirable while so substantial a part of the nation's man power remains idle, for a sales tax would tend to reduce consumer buying and in this manner act as a brake on business. The form of tax considered most desirable to meet the present need, is for an increase in the excess profits levy, higher surtaxes on the rich, higher estate and gift taxes, an increase in the present 4% normal income tax and, possibly, an increase in corporation taxes.

Warns of Newsprint Competition

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 24, 1941—Canadian local unions of the International Brotherhood of Paper Makers have received a letter from their president, Arthur Huggins, Albany, N. Y., warning them of heavy competition in newsprint from Europe after the international situation has been settled.

Mr. Huggins recounts the increased production in Canada, the United States and Newfoundland in 1940 and maintains that the reason for the increase is war conditions and the impossibility of bringing in European newsprint. Groups of United States employers and organized employees, he states, are already forming a collective organization to protect the United States pulp and paper industry from the dumping of European products after the war. He advises Canadian newsprint manufacturers and their employees to consider a similar plan.

Mr. Huggins also states in his letter that neither he nor President Burke of the Pulp and Sulphite Workers have changed their minds on the opinion they expressed a year ago, that the Ontario Paper Company and the Quebec North Shore Paper Company should be exempted from proration. Mr. Huggins thinks that the threat of European competition after the war is of more fundamental importance to the industry than the dispute about proration.

Jackson Paper Co. Entertains

The officers and employees of the Jackson Paper Company, Jackson, Miss., were entertained by the company at a banquet and dance on the occasion of the company's twentieth anniversary recently. This delightful affair was held on the roof of one of Jackson's downtown hotels.

After a delightful dinner, an interesting entertainment was presented after which dancing was enjoyed by all of the guests.

The Jackson Paper Company was founded in 1921 by H. T. Newell who is still active as president of this organization.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
January 11	86.1	January 13	92.7
January 18	85.6	January 20	90.1
January 25	86.8	January 27	91.2
February 1	85.8	February 3	89.2
February 8	86.8	February 10	87.9
February 15 ....(Prelim.)	88.9	February 17	86.6

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	90.2	86.2	83.9	86.3	91.8	93.8	87.1
1941	84.8	...	...	...	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	87.2	83.2	88.0	86.9	83.3	87.5
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date...	67.1	76.7	90.0	65.6	79.4	89.4	86.0
Year Average..	70.5	81.3	80.6	72.3	84.9	87.5	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	..	..	..	..	..	..	..	..	..	..	..	..

Week ending Jan. 11, 1941—77
Week ending Jan. 18, 1941—78
Week ending Jan. 25, 1941—78
Week ending Feb. 1, 1941—79
Week ending Feb. 8, 1941—79
Week ending Feb. 15, 1941—81

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Paper Index Number Rises

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 26, 1941—December index of the value of paper manufacturers' inventories was 112.8 compared with 110.7 in November and 102.2 in December 1939, taking December 31, 1938 at 100, according to the Industry Survey of the Department of Commerce.

Index of the value of paper manufacturers' shipments in December was 149 compared with 134 in November and 119 in December 1939, taking January 1939 at 100.

December record of manufacturers' orders, shipments, and inventories continued the pattern set in the fall of 1940. Total new business placed with manufacturers was maintained in heavy volume, with practically no change being recorded from the November figure. The moderate gains in shipments made during the first two months of the last quarter were further extended in December with the durable goods industries accounting for the increase. Unfilled order backlogs continued to advance, although at a slower pace.

Inventories were again expanded substantially, especially in the durable goods lines.

Although total new orders showed little net change, incoming business for nondurable goods declined 5 per cent from November. This was approximately offset by an increased volume of 6 per cent in new orders for durable goods. Despite the rise in shipments the continued strong flow of new orders resulted in a further expansion of 9 per cent in unfilled order backlogs during December. This compares with a 13 per cent increase in November from the previous month.

They Started Something!

WHEN VOLTA constructed the first electric cell, he brought into existence a convenient, economical source of electric energy which has found countless applications. The principle of the Voltaic cell forms the basis of the modern dry cell, and paved the way for the invention of the storage battery Nor was the value of Volta's work limited to the field of electricity. In his search for the most effective combination of metals for the production of electrical energy, he discovered the arrangement of elements in the electro-chemical series—an arrangement that plays a part in many chemical reactions, and led to far-reaching developments in the science of chemistry

When EBG engineers first made Liquid Chlorine commercially available in this country, their work also was destined to result in advances in widely diversified fields. In safeguarding the public health, municipal authorities found EBG Liquid Chlorine an exceptionally effective means for purifying water and limiting the spread of water-borne diseases. In the increasingly important field of sewage sterilization, EBG Liquid Chlorine is playing an outstanding part in preventing and abating pollution of rivers and harbors. And in the paper and textile industries, it has made possible new standards of efficiency and economy in bleaching processes.

The first cylinder of Liquid Chlorine made by E.B.G. in 1909.

Pioneers in the production of Liquid Chlorine, EBG engineers have long years of experience in its manufacture and servicing. Let their experience work to *your* advantage — specify EBG Liquid Chlorine when you buy.

ELECTRO BLEACHING GAS COMPANY
Main Office: 60 East 42nd Street, New York, N.Y.
Plant: Niagara Falls, N. Y.

EBG Liquid Chlorine
FIRST IN THE COUNTRY

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Analysis of Sodium Hydrosulphite

TAPPI Tentative Standard T 622 m-41

Sodium hydrosulphite is widely used as a reducing agent. It is formed by treating solutions of sodium bisulphite with zinc dust. There is some difference of opinion as to whether the compound has the formula $NaHSO_2$ or $Na_2S_2O_4$. The evidence, however, seems to point to the formula $NaHSO_2$ in solution and $Na_2S_2O_4$ for the dry solid.

The following method may be applied to pure and commercial samples to determine the extent of decomposition and amount of active chemical present. In brief, the method consists of treating $Na_2S_2O_4$ with formaldehyde to yield the two products bisulphite formaldehyde and sulphoxylate formaldehyde, the latter being ultimately titrated with standard iodine to determine its amount.

Reagents

(1) *Formaldehyde,* 40% solution. (Commercial "Formalin.")
(2) *Standard iodine solution,* 0.1 *N.*
(3) *Standard sodium thiosulphate solution,* 0.1 *N.*
(4) *Starch indicator solution.*

Sampling

Care must be taken to obtain a representative sample of the material from various portions of the shipment, 4 grams being necessary for each determination. The sample should be kept in a tightly stoppered bottle, filled nearly full.

Procedure

Mark a 500-cc. volumetric flask within 1 inch of the top and calibrate it by measuring the difference in volume between the two marks[1]. Place 10 cc. of 40% formaldehyde in the flask and add water, leaving room for a final 50 cc. Rotate the flask to mix the formaldehyde and water. Weigh rapidly 4 grams of its sample on a watch glass, give the liquid in the flask a whirling motion by rotating the flask, and pour in the hydrosulphite through a dry short-stemmed funnel. Rapidly wash down the watch glass and funnel with water, fill the flask to the upper mark, insert the stopper and shake by repeatedly inverting the flask for 5 minutes. Then let stand for 15 minutes before titrating.

[1] The volumetric flask is conveniently calibrated by filling to the lower mark with water, then running in water from a burette to the upper mark. The amount of sample in the 25-cc. aliquot of the solution is calculated from the volume of the flask to the upper mark. For example, if the volume between the two marks is 30.5 cc. and 4.000 grams of the sample are used, then the amount of sample in the aliquot is:
$4.000 \times 25/(500 + 30.5) = 0.1885$ gram.

Place about 100 cc. of water in a 250-cc. flask and add exactly 50 cc. of 0.1 *N* iodine solution. Then pipette into this 25 cc. of the hydrosulphite solution. Mix, let stand for 2 minutes, and titrate the excess iodine with 0.1 *N* thiosulphate, using starch indicator. From the amount of 0.1 *N* iodine consumed, calculate the percentage of $Na_2S_2O_4$ in the sample.

Calculation: 1 cc. 0.1 *N* iodine = 0.004352 gram $Na_2S_2O_4$.

Report

Duplicate titrations shall be made and the average percentage result reported to the nearest 0.1.

Additional Information

The reaction is:

$$Na_2S_2O_4 + 2CH_2O + 4H_2O \rightarrow NaHSO_4 \cdot CH_2O \cdot 2H_2O + NaHSO_4 \cdot CH_2O.H_2O.$$

The bisulphite formaldehyde is not reacted upon by iodine in neutral or acid solution. The sulphoxylate formaldehyde reacts according to:

$$NaHSO_2 \cdot CH_2O \cdot 2H_2O + 4I \rightarrow NaHSO_4 + CH_2O + 4HI.$$

Therefore:

$$Na_2S_2O_4 + 2CH_2O + 4I + 3H_2O \rightarrow NaHSO_4 + 4HI + CH_2O + NaHSO_4 \cdot CH_2O \cdot H_2O,$$

and 1 cc. 0.1 *N* iodine = 0.004352 gram $Na_2S_2O_4$.

Reference

Merriman, R. W., *J. Soc. Chem. Ind.* 42:290-292 (1923).

N. Y. S. C. of F. TAPPI Alumni Meets

The annual get together dinner of the graduates of the New York State College of Forestry, attending the annual TAPPI meeting, was held at the Cortile restaurant, New York City, on February 19. Charles G. Weber of the National Bureau of Standards was toastmaster. Members of the instructing staff present were W. O. Hisey, E. C. Jahn and F. W. O'Neil.

Others present included: A. H. Andersen, J. R. Atwater, F. G. Barber, J. C. Barthel, R. T. Bingham, L. K. Burnett, H. P. Cannon, J. P. Casey, R. T. De Pan, T. E. Dobbins, S. K. Dowst, I. J. Earle, G. O. Farrah, I. Feldman, R. D. Freeman, H. O. George, S. S. Gutkin, G. T. Hollrock, M. Kin, E. O. Knapp, A. W. Koon, L. Korte, M. J. Landberge, Wm. Landes, E. R. Lang, H. A. Lips, J. R. Lyon, W. F. Moore, M. Plunguian, E. M. Root, L. Rubenstein, L. M. Sutherland, L. Taylor, C. L. Van Schaick, R. F. Vokes, C. G. Weber, H. E. Weston, and W. R. Willets.

A. T. & T. Business Papers Purchase Standards*

By W. H. Joy[1]

Abstract

The methods and advantages of standardizing the 65,000,000 pounds of commercial writing, printing, and other business papers used annually by the Bell Telephone System are outlined. Nineteen grades have been standardized for record, correspondence, manifolding, and other general purposes. These are shown in a chart prepared to aid field selection. Four additional grades are required for tickets to record toll calls. For telephone directory text paper a single grade has been standardized and another for cover stock. Characteristics of these papers are described. Preparation of specifications and methods of delivery inspection are also reviewed.

In the normal conduct of its business, the Bell System use annually some 5,000,000 pounds of commercial papers for such varied purposes as records, reports, correspondence, bills, orders, instructions, checks, and many other business paper requirements. The selection of suitable grades and the establishment of quality standards for all of these requirements has involved a standardization program which has extended over more than 20 years.

Standardization of business papers was begun in 1917 after the Western Electric Company, in performing its function of establishing centralized supply arrangements whenever these could be carried out to the best interest of the service, had entered into contracts to centralize the purchasing of the bulk of printed business papers for two of the associated companies. This procedure was later extended to other companies and offered significant economies over the general practice of dealing with a number of supply sources and of handling each printed form as an individual transaction.

In the contract negotiations, paper was a constant source of difficulty. Numerous brands were specified, many of which the printer did not normally carry in stock, and the question of substitution would necessarily arise. Inasmuch as there were hundreds of forms, on papers of many different sizes, weights, and colors, substitution only led to confusion and to the question of whether the substitutions offered by one bidder were the equal in quality of the substitutions offered by another. This difficulty was magnified by the fact that little definite data as to paper quality were generally available.

A further complication developed in the rapid increases in paper prices during the war period. The printer could not control the cost of paper to nearly the same extent to which he could control the cost of his printing and binding, which were under his own supervision.

* Presented at the Annual Meeting of the Technical Associatioin of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Dept. of Operation and Engineering, American Telephone & Telegraph Co., 195 Broadway, New York, N. Y.

It was evident that development of a new procedure was necessary. The objective would be to establish a range of standard papers of suitable quality for all requirements. These would then be supplied to the printer at definite prices, in order to relieve him of the burden of the paper problem as to both purchasing and quality. Under this plan, the printers, in submitting their bids for a telephone company's business paper requirements, would be concerned only with those elements of cost over which they exercised control.

Establishment of Standard Grades

The standard grades were established by making a systematic survey of all of the many plain papers and hundreds of printed forms used by the associated companies. These were classified as to furnish, finish, strength, color, and other characteristics. Based on this survey it was determined that 13 grades would suffice to cover the requirements and these were substituted for the papers then in use. Particular attention was directed to selecting stocks that would be adequate for the life and service required and yet not more expensive than necessary. At the same time an effort was made to redesign forms of odd sizes that could not be cut economically from mill standard ream sizes and to eliminate colored stocks except where absolutely essential for identification purposes and in these cases to use one of a limited number of standard colors. The original list of 13 grades has been revised and expanded during the past 20 years, in pace with the changing requirements of the telephone companies and technical developments in papers, until today there are 24 standard grades. Table I lists 19 of the most widely used standards.

This table is furnished to the man in the field who is concerned with form design. Knowing what is required of the form in the way of use, handling, erasure, and permanence, he is able to select a suitable paper by balancing cost against quality as indicated by the fiber content and strength index, an arbitrary value based on an average of the bursting and tearing strengths of the stock. In addition to use on printed forms many of these papers are used as plain cut sheets for typewriter and duplicator requirements. These are furnished in ream packages, both unpunched and with standard 4-hole punching, under standard code numbers which facilitate identification and ordering.

It will be noted that the standard range covers papers from 100% rag content for permanent record purposes down to a groundwood-sulphite manila stock for such requirements as temporary use forms and draft copies. The types of papers included are ledger; bond; writing; manifold; duplicator, both mimeograph and hectograph; and safety. Since rag stocks are used primarily for permanence, only papers of 50% rag content or higher have been standardized on the theory that at least half the fibers present

TABLE I.—BELL SYSTEM STANDARD PAPERS FOR STATIONERY FORMS AND FOR TYPEWRITER AND DUPLICATOR WORK

Name	Substance Number	Strength Index	Fiber Content	Color	Characteristic Qualities	Use
LEDGER PAPERS						
Telco Cable Ledger	36	118	100% Rag	Buff	Maximum appearance, permanence, strength, writing and erasive qualities.	Forms where unusual erasive and wearing qualities are essential, such as cable pair record forms.
Telco Cervus Ledger	28	95	100% Rag	White Buff	Maximum appearance, permanence, strength, writing and erasive qualities.	Forms and general ledgers where permanence and exceptional wearing and erasive qualities are important factors.
Telco Guide Ledger	24 28	54 61	50% Rag Balance Sulphite	White Buff	Fine appearance, very good permanence, strength and erasive qualities, fine writing surface.	Forms and general ledger use requiring a permanent paper with good wearing and erasive qualities. Suitable as the master sheet for gelatin type hectograph duplicators.
BOND PAPERS						
Telco Blue Print Bond	13	37	100% Rag	White	Maximum appearance, permanence, strength and erasive qualities. High degree of transparency.	Forms requiring high and uniform transparency in order that blueprint copies may be made of records prepared with typewriter or pen.
Bell Seal Bond	13 16 20	37 48 64	100% Rag	White	Maximum appearance, permanence, strength and erasive qualities. Cockle finish.	Letterheads and printed forms requiring maximum permanence and wearing qualities.
Bell Seal "A" Bond	13 16 20	34 42 57	75% Rag Balance Sulphite	White	Maximum appearance, high degree of permanence, strength and erasive qualities. Cockle finish.	Letterheads and printed forms requiring a high degree of permanence and wearing qualities.
Telco Favor Bond	13 16 20	28 37 47	50% Rag Balance Sulphite	White Blue Canary Green Pink Goldenrod	Fine appearance, good permanence, very good strength, and erasive qualities. Light cockle finish.	More general work than the Bell Seal bond grades where a permanent paper having good wearing and erasive qualities is required.
Telco Message Bond	13 16 20	21 27 35	100% Sulphite	White Blue Canary Green Pink Goldenrod	Good appearance and strength. Limited permanence and erasive qualities.	Very general use where permanence, wearing and erasive qualities are not of great importance.
Telcopaque Bond	13	18	100% Sulphite	White	Good appearance, maximum thinness and opacity. Limited strength and permanence.	Two-sided printing work where minimum bulk is essential.
Telco Manila	16 20	25 32	50% Ground Wood, Balance Sulphite	Manila	Fair appearance, limited strength, fair writing surface, suitable for pencil erasure. For temporary records only.	Very general use on temporary forms and as a typewriter paper where appearance and permanence are not essential.
WRITING PAPERS						
Telco Writing	16 20 24	23 32 38	100% Sulphite	White	Good appearance, strength, and writing surface. Limited permanence and erasive qualities.	Telephone bills and forms requiring a smooth pen writing surface where permanence, wearing and erasive qualities are not of great importance.
MANIFOLD PAPERS						
X Bond	9	24	100% Rag	White Canary Green	Maximum appearance, permanence, strength, and erasive qualities. Heavy cockle finish.	Manifolding purposes requiring permanency and general service qualities.
Bell Manifold	7	16	100% Rag	White	Maximum thinness and permanence. Good appearance, strength, and erasive qualities on carbon copies. Glazed finish.	Extreme manifolding purposes where maximum thinness is required.
Telco Onionskin	8	12	100% Sulphite	White Blue Pink	Good appearance. High degree of thinness. Limited strength, permanence and erasive qualities.	General manifolding requirements where permanence, wearing and erasive qualities are not of great importance.
DUPLICATOR PAPERS						
Bell Mimeograph	16 20 24	32 41 53	75% Rag Balance Sulphite	White	High degree of permanence and strength. Good appearance. Fair pen writing surface.	Mimeograph work where a high degree of permanence is required.
Telco Mimeograph	16 20 24	27 35 44	100% Sulphite	White Canary Green Pink Goldenrod	Good appearance and strength. Limited permanence. Fair pen writing surface.	General mimeograph work where permanence is not of great importance.
Telco Hectograph	20	24	100% Sulphite	White Buff Green Salmon	Good appearance. Limited strength and permanence. Coated one side to provide maximum smoothness. Fair writing surface.	General use in making copies on gelatin process hectograph duplicators.
SAFETY PAPERS						
Telco Safety Paper	24	45	100% Sulphite	Buff Green Pink Primrose Stone	Safety surface design. Good writing surface and strength. Limited permanence.	Official company checks and other forms requiring safety protection.
Telco Safety Paper, Special Grade	24	57	50% Rag Balance Sulphite	Buff Green Pink Primrose Stone	Safety surface design. Good writing surface and permanence. Very good strength.	Official company checks and other forms requiring safety protection where permanence is a factor.

Substance number is the weight in pounds of 500 17 x 22-inch sheets. Strength index is the average of the bursting and tearing strengths. Colors listed available in each weight.

should be of a permanent nature. In this connection, of the type of papers covered by this chart, rag-content stocks represent about 10% of the annual Bell System usage on a poundage basis. While for the most part the use requirements of these various grades of paper are similar to those of any large business organization, a number have special applications to the telephone business. Several of these are pointed out as a matter of interest.

Grades and Use Requirements

Telco cable ledger, a 36 substance all-rag ledger, is largely used for the recording of cable pairings. Since these are frequently changed, erasure is of vital importance. The specifications covering this paper require that the sheet shall withstand 5 superimposed pen and ink writings and subsequent erasures without feathering of the ink or wearing through the sheet.

Telco blue print bond, a 13 substance all-rag bond, is mainly used for forms where a number of copies reproduced by blueprinting are required after the data have been entered on the form. Uniform transparency is accordingly an essential characteristic and, to insure this, specifications for this paper require fairly narrow opacity limits, 61 to 65% has been found suitable.

Telcopaque bond, a 13 substance titanium pigmented sulphite bond with an English finish, is used for the most part for printing instructions in handbook size, approximately 4 by 6.5 inches. These instructions, frequently containing cuts, are carried by linemen, installers, etc., for use in the field. A regular 20-pound sulphite bond was formerly used and the bulk of the binders became a definite problem. Through the use of the lighter weight paper with a more highly calendered finish it was possible to cut the bulk almost in half. At the same time due to the presence of the titanium dioxide filler, opacity was not seriously sacrificed. Although an appreciable reduction in physical strength could not be avoided, this paper compares favorably in this respect with the type of book paper used in many engineering handbooks and has proved adequate for the requirement.

Telco safety paper is provided in 2 grades, a 50% rag furnish and an all-sulphite stock. Since the introduction of the latter in 1932, over 90% of the system checks have been printed on this stock resulting in an appreciable annual saving. The rag grade is employed where checks must be retained as permanent records. Roughly, 2 tons of the sulphite grade are used each quarter in issuing more than 600,000 dividend checks to the stockholders of the American Telephone and Telegraph Company. From the manufacturing of the checks until they are mailed to the stockholders a very close time schedule must of necessity be followed. To meet this schedule and to withstand the many operations and considerable amount of handling the checks receive from the time the raw stock is manufactured until the canceled checks are returned to the telephone company, it is essential that the paper be of satisfactory physical strength and free from manufacturing defects, particularly curl which can cause serious time losses in the mechanical operations such as running the checks through the addressing and check writing machines.

Approximately 2,000,000 pounds of paper are required annually for recording the many millions of local and long distance toll calls. The papers used for this purpose, four in number, do not appear on the paper chart since they have only one specialized use. Local tickets which vary in size from 2.5 by 5 inches down to 2 by 3 inches are printed on groundwood stocks. For about 85% of these tickets a 45-pound, 24x36—500, stock containing about 70% groundwood, corresponding to the trade grade known as B Poster, has been standardized. For some of the smaller tickets a 36 substance of similar furnish and a 32-pound newsprint of higher groundwood content are used. The requirements of these papers are that they shall be of satisfactory physical strength, have a good pencil writing surface, and be free from lint. Since the tickets are used in the vicinity of switchboards the latter characteristic is of particular importance due to the fact that even small quantities of lint if it gets in the apparatus may cause service difficulties. Many of these tickets are padded by means of a latex adhesive binding which has been used successfully for about 5 years.

Most of the larger long distance toll offices are equipped with pneumatic tube systems operated on a vacuum principle by means of which tickets upon which the details of the telephone calls have been recorded are transmitted from the operator to a central point. A 28-pound sulphite stock, called *toll ticket ledger,* is used for these tickets which are 2.5 by 5 inches in size and have two scorings across the ticket, one 5/16 inch from the top and the other 1.5 inches from the bottom. After making the necessary entries on the ticket, the operator folds over the longer bottom flap completely, bends up the top flap slightly and inserts the ticket bottom end first through a valve into the pneumatic tube which is oblong in shape and 2.75 by ⅜ inches in size. By means of the rush of air into the tube the tickets are carried through the tube at a speed of about 30 feet per second, the flaps acting in the manner of sails. When these tubes were first installed it was thought that a high quality paper would be needed to meet the requirements for this type of service and an all-rag stock was standardized. However, further experience indicated that stiffness and body were the most important characteristics and laboratory tests demonstrated that sulphite papers were at least equal to rag stocks in this respect. The adoption of a sulphite paper resulted in very appreciable annual savings. During the summer months under high humidity conditions moisture tends to condense in the tubes. Laboratory tube tests in which 90% relative humidity is maintained have shown that starch surface sizing tends to minimize the effect of humidity in reducing the stiffness of the ticket and in slowing up the speed of tube travel. Light-weight paper or improperly folded tickets due to crooked scorings may cause tickets to jam in the tube system. To avoid such difficulties rigid weight and thickness limits must be met and the paper as received by the printer must be free from wave or curl. In addition, the stock must have satisfactory handling characteristics and a good writing and printing surface.

Telephone Directory Paper

Up to this point the papers covered have been those standardized for printed forms, office requirements, and other business purposes. In addition, and representing a considerably greater volume, is the paper used for telephone directories with which you are all familiar. For these books approximately 54,000,000 pounds of text paper, which would be classi-

fied in the trade as catalog paper, and 2,000,000 pounds of cover stock are required annually. While directory stock varies slightly, particularly in shade and finish, depending upon the mill producing it, all of this paper is manufactured to conform to the same specifications. Three weights of paper are used, 22.5, 28, and 32 substance on a 24x36—500 basis, the weight selected depending on the size of the book. The furnish consists approximately of 65% groundwood and 35% sulphite with 7% clay filler. Since the paper furnished in rolls, is billed on a weight basis and used on an area basis, weight control is of considerable importance. Based on annual averages deliveries are conforming within the 2.5% tolerance specified for this characteristic. Adequate physical strength is essential to insure that breaks do not occur on the high-speed presses and also that the finished books stand up for the six months to a year of service life.

The finish must be satisfactorily smooth to give a good printing surface and yet sufficiently absorbent to printing ink to minimize offset. Since the size of the book is directly affected, thickness must conform within definite limits. Legibility being a primary requisite every effort is made to keep the paper as free as possible from dirt specks, shives, and shiners. While in newsprint these are not particularly serious, in directory stock difficulties would immediately arise if the legibility of the telephone numbers were affected. Brightness and opacity are of obvious importance. White paper is used for ordinary listings and canary stock for the classified sections. Since cuts as well as printed matter appear in the latter, opacity is particulary important. Surprisingly canary paper of the same weight and furnish seems to be less opaque than white. While the reason for this is not apparent, definite evidence that it is so has been obtained in laboratory tests. Several experimental mill runs have been made in 22.5-pound canary where titanium dioxide was included in the furnish. The retention of 1.5% of the pigment resulted in an opacity increase of about 4% and a definite improvement in the brightness of the printed page.

Supplementary to the regular directory stock, there is a requirement for almost a million pounds of paper each year for the printing of information operators' directories which are issued at frequent intervals to care for the many new and changed listings. For this requirement two types of paper are used, one a 16 substance no. 4 bond and the other a heavier and lower groundwood-content paper than the regular directory stock to provide greater strength to care for the hard handling these books receive.

Miscellaneous Papers

In addition to the papers already referred to, many miscellaneous papers and paper products have also been standardized. These include such diversified items as envelopes, filing supplies, addressing machine rolls, adding machine rolls, carbon paper, blueprint paper, pads, notebooks, blotters, and paper towels. While it is not possible within the scope of this article to discuss all of these, one of our perennial difficulties which will bear mentioning is with card stock. Since it is directly related to filing space, the bulk is important. Our thickness specifications are in line with trade customs, those of other large users such as the Government Printing Office, and when adopted were approved by many of the mills making these stocks. In spite of this, deliveries frequently run overthick, often appreciably so. This would seem to indicate that either the specifications are too stringent or improvement could be made in manufacturing control. Another card problem has to do with the color. Salmon for example may be anything from bright orange to deep pink according to the mill manufacturing the stock.

Preparation of Specifications

In preparing specifications effort is directed toward describing the commercial grades required in terms of fully practical and reasonable quality limits. Any existing specifications or trade customs are taken into consideration and where possible limits having general recognition are adopted. Frequently tentative specifications are submitted to a number of representative mills making the type of paper in question and the final requirements adopted are a result of this cooperative effort. The following points are usually covered: weight, thickness, bursting and tearing strengths, ash, pH in the case of permanent papers, opacity on stocks where it is important, and fiber content. All specifications are supplemented by approved samples to cover such features as color, brightness, dirt, finish, formation, sizing, printing and duplicating characteristics, etc.

Physical tests at present are made under controlled laboratory conditions of 70 deg. F. and 65% relative humidity which were adopted some years ago because they were the TAPPI (Technical Association of the Pulp and Paper Industry) Standard. However, in view of the recent proposed change in TAPPI Standard T 402 m, arrangements are being made to revise all specifications to provide for the new standard conditions of 73 deg. F. and 50% relative humidity. Many years use of bursting and tearing strengths as a means of determining physical strength, have shown that they are adequate for our purposes so that fold is only used on a comparatively few grades of paper. From the viewpoint of laboratory costs the tear test seems preferable due to the fact that considerably less time is required for a set of check tests. Samples from upwards of 3000 deliveries of papers are tested annually, so that time is an important consideration. Specification requirements are based on maximum or minimum limits, in some cases, as for thickness, both are given. In spite of the fact that tearing strength is affected by the grain of the paper, the same minimum is specified for both directions on the theory that the paper is only as strong as its weakest direction. A strong cross-direction tear does not in any way compensate, in our opinion, for a weak tear in the machine direction. It is expected that all paper delivered will conform with specifications, and accordingly to meet the minimum strength requirements it is necessary for the mill in manufacturing the stock to aim at an average strength sufficiently above the minimums to provide a satisfactory safety factor to care for unavoidable variations during the run.

Inspection

Delivery inspections are for the most part made on a spot check basis, their frequency depending on the importance and past performance of the paper. However, where large quantities are involved or the paper is of particular significance such as in the case of

directory and toll ticket papers, every shipment is tested and outturns from each mill run are also required. Where minor variations from the specifications are found these are simply brought to the mill's attention so that corrective measures may be made on the next run. Rejections are only involved where the deficiencies are so great that the usefulness of the paper is seriously impaired. One of the more frequent causes for rejection is curl. This is particularly troublesome since it causes real difficulties in printing and duplicating operations and yet, is not readily evaluated in the laboratory. It is also markedly affected by humidity. A curl that is very pronounced at 30% relative humidity, a typical indoor winter condition, may disappear altogether due to easing of the stresses in the paper, after conditioning to 65% relative humidity in the laboratory. Any suggestions as to how to measure curl and what is an acceptable magnitude would be welcome.

Conclusion

Standardization of commercial papers in the Bell System has resulted in significant economies, in the assurance that proper grades are being used for each requirement, in an immense saving of time on the part of those responsible for selecting papers, and in greatly simplifying the paper problems for the printers. Future progress is assured by the certainty that the paper industry will continue its past records of making available to consumers, papers constantly improved in quality and value.

Alkali-Staining Property of Paper

Revision of TAPPI Standard T 440 m-37

It is desirable that certain papers, particularly those used as soap wrappers, should not stain unduly with alkali. In the past this property has been generally judged by dropping upon the paper alkaline solutions of varying strengths. The present method is designed for a quantitative statement of the resistance to alkali staining.

Scope

This method is applicable to white or nearly white papers. It is not applicable to dyed papers and is not advised for use with pulps. It can be used with hard-sized (rosin) papers by first removing the major part of the sizing with ether or methanol.

Reagents

(1) *Potassium Bichromate Solution.* Dissolve 0.25 gram of $K_2Cr_2O_7$ in a small amount of water and dilute to 1 liter.

(2) *Congo Red Solution.* Make up a 0.05% solution in water. Eastman Kodak Company Congo Red E.K.770 is recommended.

(3) *Normal Sodium Hydroxide Solution.*

Apparatus

(1) *Nessler Tubes.* A set of six is convenient. They should be made with thin, colorless walls, 1 mm. thick, have a diameter of 29 to 30 mm. and the 50-cc. mark should be about 90 mm. from the bottom outside.

(2) *Precision Pipette.* Capacity 1 cc., graduated to 0.01 cc.

Test Specimen

The test specimen shall consist of 3.00 grams of the paper torn into pieces ¼ to ½ inch square. (*See* Note 1.)

Procedure

Place the test specimen in a 250-cc. Erlenmeyer flask, add 50 cc. of hot water and boil for 5 minutes. Decant off the liquid into a 100-cc. volumetric flask or graduated cylinder. Add 50 cc. of hot water to the paper in the flask and boil again for 5 minutes. Decant the second liquid into the first and make up to 100 cc., using the make-up water to wash the paper in the flask.

Add 25 cc. of normal NaOH solution to the combined liquids and, after standing for at least 5 minutes, filter, using a fast filter paper if the insoluble matter is flocky, or a close filter if it appears cloudy. Compare the clear filtrate with standards made as follows:

To 50 cc. of the bichromate solution add 0.1 cc. of the Congo red solution and mix well. Place different amounts of this mixed solution, such as 0.2, 0.5, 1.0, 2.0 cc., each in separate Nessler tubes, dilute to the 50-cc. mark with water and mix.

Place 50 cc. of the filtered alkaline solution from the paper in another Nessler tube and compare with the standards.

The solutions are best compared by holding the tubes containing them over white paper, but not resting on it, and looking down through the solutions. If none of the standards matches the solution, make up standards of other strengths and compare them with the solution.

Report

Report the number of cc. of bichromate-Congo red solution required to match the tint of the alkaline extract of paper as the *alkali-staining number.* Express the results to 1 decimal place.

Interpretation of Results

It has been found that papers showing an alkali-staining number of more than 3 will give a marked stain with 1% sodium hydroxide solution by the drop test.

Notes. (1) With vegetable parchment a finer subdivision of the sample is advisable.
(2) Exact matches of tint are not always possible, but distinction in intensity is readily seen.
(3) As bichromate slowly destroys the Congo red color, the solution should not be mixed until immediately before use.

Reference

Crossley, T. Linsey, "A quantitative test for soap wrap paper." *Tech. Assoc. Papers* 20:208 (June, 1937).

Appointed Hammermill Agent

SHREVEPORT, La., February 24, 1941—The Hammermill Paper Company of Erie, Pa., announces the appointment of E. C. Palmer & Co., Ltd., of this city as Hammermill agent.

Storage of Crop Fibers and Preservation of Their Products*

By Harold R. Hay[1] and Elbert C. Lathrop[2]

Abstract

Adequate storage and product preservation of crop fibers constitute an important step in the extended utilization of approximately 100 million tons of annually replenished fibrous cellulosic raw materials.

Storage preservation is attained by minimizing exposed surface, preventing undue inclusion or entrance of water in storage piles, and controlling, by specific chemical or biological means, those organisms which weaken the fiber. Bagasse is commercially stored by using a controlled fermentation process which limits growth of organisms and dries out the fibers.

Chemicals used for the preservation of wood and for the preservation of defibered cellulosic materials are not readily interchangeable. For felted fibrous products, efficient use is made of relatively insoluble powders, flocculent precipitates, emulsions, and chemicals capable of adsorption by lignocellulose.

Annual crops are being increasingly recognized as a prolific source of organic raw materials. Based on this fact the four Regional Research Laboratories[3] of the U. S. Department of Agriculture have come into being to find and develop industrial outlets for excess farm commodities. The greatest annual tonnage of these commodities is in the form of agricultural residues, estimated at 200 million tons, of which about one half eventually may be available for industrial utilization.

Failure to use the major portion of this immense tonnage in the most profitable manner for the farmer and the most efficient way for industry is serious. Establishment of industries consuming an appreciable percentage of these residues would provide employment for thousands of people. This is by no means a new subject. It has engaged many able minds.

An important stumbling block in the development of new markets for agricultural residues has been and now is the economics and technology of collection, transportation, and storage. Collection and transportation have been discussed elsewhere *(1)*. The present paper broadly surveys the preservation problem, as it applies both to the storage of raw materials and to the finished products presently or potentially derived from agricultural residues.

Any effort to advance a raw material must also comprehend the factors influencing the sale of the finished product. Cellulosic materials, whether from agricultural fibers or wood, have their greatest weakness in susceptibility to attack by fungi, insects, and fire. Wood has lost many markets because of these agencies of destruction and has retained others only through the use of chemical preservatives. To gain new markets for agricultural residues, it is desirable to transpose the applicable knowledge previously acquired with wood and to investigate the special problems of the new raw material. It is manifestly important then to consider the preservation of crop fibers in the light of the prior art of wood preservation[4] wherever comparison will serve a valid purpose.

Satisfactory protection of wood ordinarily is accomplished by specialized technique requiring elaborate and costly equipement *(2)*. For some purposes, simple methods and effective chemicals have been developed through cooperation between government and industry. New treatments are now widely used by lumber mills and millwork manufacturers with increased demand for toxic chemicals. This interest should likewise be directed toward crop fiber preservatives. Valuable toxic chemicals otherwise may be dismissed from consideration because of properties interfering with application to wood. Such properties of the chemical may constitute its greatest asset as a preservative for stored fibers, insulation board, or paper.

While useful solid products are more easily obtained from wood than from annual residues, the preservation of products from raw materials which have been defibered is the more adaptable and more easily accomplished. Analogies and dissimilarities affecting the methods of treatment and choice of chemicals begin at the time of collection of the two cellulosic materials and extend to the finished articles. The discussion of their protection will be divided into the two classifications: (1) raw material or storage preservation; and (2) finished product preservation.

Storage Preservation

Crop fibers are usually directly available only two or three months during the year. Industries converting these residues must depend mainly on a stored supply. The principal residue fibers used industrially are straw, sugar-cane bagasse, and cornstalks; all of which are subject to deterioration by bacteria and fungi. These ubiquitous microorganisms make necessary various control measures designed to alter any one or combination of the factors favorable for growth. Their severity of attack on a suitable food will be determined normally by the water content, temperature, and oxygen supply. If any one of these is made unfavorable, growth will stop or be retarded. However, conditions unfavorable for one type of destructive organism may be optimum for another and the extreme conditions to cause death of all organisms would not generally be practical for continued use. An alternative control using chemicals which react upon the microorganisms to cause death has been found more universally effective.

The storage preservation of wood is accomplished through drying before bulk piling and use. High-

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[3] The Northern Regional Research Laboratory is one of four regional laboratories authorized by Congress in the Agricultural Adjustment Act of 1938 for the purpose of conducting research to develop new uses and outlets for agricultural commodities. These laboratories are administered by the Bureau of Agricultural Chemistry and Engineering of the U. S. Department of Agriculture.

[4] The U. S. Department of Agriculture through the Section of Wood Preservation of the Forest Products Laboratory has conducted extensive research and contributed numerous publications on the subject of wood preservation.

grade lumber is kiln-dried, the removal of water reducing susceptibility to decay and shrinkage as well as resulting in better nail holding and lower freight charges. Low-grade lumber is airdried, using various mechanical aids, such as stacking in well-spaced piles on a substantial foundation with good drainage and the use of spacers, ventilating flues, and a roof. Intermediate grades are either chemically treated in addition to being airdried in the manner described, or they are kiln-dried.

The chemical dip-treatment of freshly cut lumber controls fungi of the mold type which cause sap stain *(3)*. These discolorations lower the lumber grade but do not materially decrease fiber strength. Aqueous solutions of such chemicals as soda, borax, organic mercurials, and chlorinated phenols are employed. These treatments are inexpensive and constitute a surface protection designed to be effective until the board dries to a moisture content unfavorable for fungus attack.

Formerly, an annual loss exceeding $10,000,000 was caused by staining and decay of lumber in storage. Good yard practice and chemical dips have strikingly reduced this waste.

The dollar losses of stored crop fibers have been small in comparison because of the smaller volume and value of the raw material. Existing losses, nevertheless, are important for the future development of these residues and to the industries now based upon them. The Celotex Corporation reports that $50,000 was spent for studies on bagasse preservation which resulted in annual savings amounting to several times the cost of the research *(4, 5)*. The total fiber loss was reduced from 30% to less than 10%. In view of these extensive investigations on bagasse, it is well to see what principles of biological control have been employed and where these can find application to other fibers.

Control by Temperature and Drying

Because of the high moisture content, bulkiness, and low value per ton, it is not generally economical to force-dry crop fibers in a kiln or rotary drier. A patent has been granted to accomplish the drying, sterilizing, and partial cooking of bagasse by incorporating a heat-generating compound such as dry lime into bales of wet fiber *(6)*. This process, however, has never achieved commercial application. Extensive commercial use of biological reactions, not harmful to the fiber, have accomplished the same effect at a minimum cost *(7)*. This patent process has been in continuous use for more than 16 years.

Coming from the sugar mill, bagasse contains from 2 to 4% of sugar and 50% of water. Within a few hours after being baled and stored, the sugar undergoes an exothermic fermentation, which within a week raises the interior temperature of the storage pile to 60 deg. C. This heat and large volumes of carbon dioxide produced, cause circulation around the loosely arranged interior bales, and gases saturated with water at the elevated temperature escape through ventilation channels provided. The pasteurizing temperature on the interior of the pile may be maintained as long as 3 months and eventually reduces the moisture in the bale below 30%. The pile then gradually cools, and the moisture content of the fiber is below the optimum for fungus growth.

This method is less applicable to crop fibers of lower sugar content. It is not necessary for straw or other fibers collected in a dry state. Because of an intermediate and variable moisture content at the time of harvesting, the storage of cornstalks presents a problem distinct from bagasse and straw. This particular problem has received relatively no study; and the only recommendations which can be made are the adaptation of methods discussed herein for other fibers.

Control of Oxygen Supply

It is generally known that fungi and bacteria are vitally affected by the oxygen content of their environment and the medium on which they are growing. Those organisms causing the greatest amount of damage to fibers in storage require the presence of gaseous oxygen. It is evident that exclusion of oxygen will stop storage losses. For this reason submersion in water, a recognized method of preserving logs and piling, has been suggested for the storage preservation of groundwood pulp *(8)*. The application to bagasse is patented *(9)* and is reported to be used in Hawaii *(10)*.

The exclusion of oxygen can likewise be accomplished by gases such as carbon dioxide *(11)*. Where the carbon dioxide or other gas which displaces oxygen can be produced at little cost, as by a natural biological reaction not harmful to the fiber, this method may be of pronounced value. Preservation by oxygen-exclusion has not been applied to straw or other dry fibers because these need only to be kept in an approximately dry state.

Control of Moisture Content

The most widely recognized method of preserving stored fibers is that of maintaining the moisture content at a minimum. If the water does not exceed 25% of the moisture-free weight of the fiber, conditions will not be favorable for microbiological activity. After this moisture content is reached, whether by force-drying, airdrying, or drying by exothermic fermentation, the fibers require only mechanical protection from additional water to maintain all of their useful properties over an extended period of time.

Mechanical protection, therefore, becomes the prime consideration for storage preservation, being applicable to all fiber brought to a dry condition. The most satisfactory protection is storage within a permanent structure having roof, sides, and floor. While used for cotton and flax, this means is not economically feasible for storage of bulky, low-value crop residues. To minimize loss in open piles the underlying principle is to expose the least possible amount of fiber to water.

It may not be commonly recognized that four relatively small, flat unroofed piles of baled fiber, each pile measuring 25 by 50 feet and 20 feet high, will expose twice as much fiber to weather damage as one square pile 50 by 50 feet and 40 feet high which would have the same volume as the four together. Large piles, with three or four times greater length than width, present an intermediate condition. The most desirable shape and size are somewhat determined by handling operations, fire insurance schedules, and other factors, but should conform closely to a cube and be as large as feasible for the least damage during storage. In straw storage, decay or other damage resulting from rain is said to occur in the top three tiers of bales, the bottom tier, and on the sides.

The ground on which the pile is to be erected should

be slightly crowned and then covered with several inches of gravel or cinders to permit good drainage. To prevent being carried with the fiber of the bottom bales to the cooking and refining operations, the gravel or cinders should be covered with soil or loose fiber. The whole base may be heavily treated with a toxic chemical to maintain a sterile condition under the bales. Sodium arsenite, an inexpensive chemical which is used as a soil poison for control of termites, is toxic to many cellulose-destroying fungi.

Several methods of finishing-off piles have been investigated by various mills using crop residues. Three of these are designed to keep the top bales dry by use of either a permanent shed roof, a portable section roof, or flexible covering. In addition, some stacks are left with a flat top and others brought to a peak. The value of the peaked top is subject to question. Permanent roofs have not been widely adopted because of the great size required, maintenance expense, and interference with stacking operations by columns, roof girders, and the roof itself. Experiments with sisalkraft paper and tarpaulins have not been generally successful. Paper shrinks, and both paper and tarpaulins have the objections of short life, tearing on bale wires, and difficulty in fastening securely to the pile without damage. The greatest fault of flexible coverings is the lack of an overhang. Water, draining from the top, flows down and enters the sides of the pile.

A recommended procedure is to employ a portable roof made from sheets of galvanized iron dipped in an asphalt paint. Sections of these metal "shingles" can be arranged to overlap and form a tight moderately-pitched roof which should extend 18 inches beyond the edge of a pile 25 feet high. The amount of overhang might vary somewhat in proportion to the height of the stack and the wind velocity expected. The overhanging portion should be tied into the pile by means of guy wires, and the shingles themselves secured to the top bales with long metal pins. This type of roof has been used in bagasse preservation for 10 years with abundant justification.

When piling bales of wet fermentable fiber, such as bagasse, it is necessary to leave numerous channels between the bales to provide ventilation from the interior of the piles. A special pile arrangement particularly suitable to encourage the fermentation previously described, is disclosed in a patent *(12)*. Baled straw and similar fibers should be solid piled only when dry. If moisture is entrapped, in one of several ways to be mentioned, the microorganisms on the fiber find conditions excellently suited for growth. Extent of losses depends upon the amount and distribution of water and the protraction of storage.

The moisture content of straw at the time of purchase by paperboard mills is generally known with a fair degree of accuracy. Deductions are made for excessive water. Whenever the excess reaches serious proportions and the quantity of wet straw is large, every attempt should be made to dry these bales before stacking. Otherwise they should be marked for placement on the outside of the piles. Furthermore when freshly-cut straw is baled, there is often an inclusion of green weeds. These add moisture to the straw fibers adjoining so that the resulting decay is not limited to the weeds. Even with clean dry straw, an inordinate amount of moisture may result from rain during the erection of a pile or after completion. When rain begins, it is a good practice to cover the top bales of unfinished piles with tarpaulin or tarred paper. If this is not done, and it is not possible to delay further piling until evaporation of the rain water, quick use of a preservative applied in sufficient quantity may be of considerable value. In this case the bales in the next few tiers should be spaced to provide ventilation channels for evaporation of the water.

Chemical Control

At present, chemicals are of secondary importance in storage preservation of crop fibers. The only commercially developed procedure employing chemicals consists of liberally lining each tier of bales along the outside edge of a pile with a dry water-soluble preservative *(13)*. The interior bales are not treated, but the top of the pile is freely sprinkled with the chemical before being covered with an overhanging roof. Rain entering the sides or blown under the roof, dissolves the preservative and carries it as far as the water penetrates. Thus, with minimum use of chemical, the preservative is translocated to any subsurface area where rain water would otherwise produce conditions favorable for fungus growth.

Boric acid is the only chemical known to be used for the treatment of wet baled bagasse, but other toxic water-soluble chemicals are suitable. The principal requisites are low cost, rapid application by untrained labor or by inexpensive methods, low toxicity to humans or domestic animals, high toxicity to microorganisms, and noninterference with subsequent manufacturing operations, such as cooking and waterproofing. Water insolubility or properties such as precipitation by carbon dioxide would eliminate a chemical since rain water would go beyond the zone protected by insoluble preservatives.

Effective chemical and mechanical protection of crop fibers greatly reduces storage losses and assures uniform raw material of superior quality. Uniformity facilitates production control and improves characteristics of the finished product. In chemical pulping processes additional economies result from the elimination of chemical consumption by valueless decayed fibers.

Product Preservation

Preservation of processed products involves chemicals of a fundamentally different character applied at much higher concentrations. The multiformity of finished articles permits various methods of impregnation and broad choice of preservatives. Analogies between the preservation of solid wood and of defibered cellulosic materials become less outstanding and the differences increasingly significant.

It is not necessary to treat wood for the majority of uses, though a much larger volume than is presently treated should be protected. Restricted accessibility of preserved wood together with the added costs of treatment, amounting to from 10 to 100% of the cost of the wood itself, have limited its use. Separate inventories of treated and untreated wood are made necessary.

In felted fibrous products, particularly rigid insulation, hard board, and paper, the cost of adequate treatment usually ranges from 0.5 of 1% to 2% of the retail price. Insulation manufacturers using the lower cost treatment have found it advantageous to treat their entire output even though much will be used under conditions not requiring a preservative. This obviates stocking separate inventories or making

special runs of treated products. The slight increment in cost is absorbed with the manufacturer capitalizing in sales literature on the fungus and insect resistance of his articles.

The functions to be served by treated wood and felted products vary in an important manner. Preserved wood frequently is in contact with water which tends to leach the preservative from the wood; in the case of some preservatives, this leaching may be such as to permit subsequent decay. The thermal or structural utility of felted board products is lost to a varying extent under such conditions. Where excessive moisture is expected, defibered insulation products are coated with asphalt or even may be hermetically sealed in containers which completely exclude moisture and nullify the need for a preservative.

Requirements of a Product Preservative

The major specifications of a preservative are identical for wood or for defibered products, but the secondary requirements vary considerably. There are nine essentials for an acceptable chemical. These are briefly discussed below.

1. Toxicity to Destructive Agents: The preservative must be highly effective in the control of the usual organisms which destroy or damage cellulosic fibers. These include molds, decay fungi, bacteria, and termites. Balanced control, available in present chemicals, is highly desirable for general use but not required for specialties, such as food wrappers. The required concentration varies with the chemical, the destructive agent to be controlled, and the severity of the conditions of use. The concentration should not ordinarily exceed 2% of the weight of the moisture-free fiber, unless other desirable effects are obtained, such as fireproofing, waterproofing, stiffening, or filling.

2. Nontoxicity to Higher Life: The preservative must not introduce a hazard for humans or domestic animals under any conditions which might reasonably be expected to result from normal use of the treated material. Paper food containers present an expanding field for chemicals imparting antiseptic properties. Here the matter of health hazard is of marked prominence. Practically all toxic chemicals now commercially used for wood or insulation present a major objection, if brought into direct contact with food.

3. Permanence: The chemical must protect the material for full useful life or for such time as to obtain a substantial saving on the investment in the treatment. Force-drying of felted materials at temperatures from 120 to 180 deg. C. will sublime some chemicals and steam-distill many others. The relatively thin and porous nature of many defibered products permanently presents a much greater surface for volatilization and leaching than does wood.

4. Uniform Distribution: The preservative should be easily and uniformly distributed throughout the mass. Use of volatile solvents for fibrous products should be avoided, but when used there should be little tendency for the preservative to deposit at or near the surface. Simple chemical tests to indicate the distribution and concentration are an important control item.

5. Lack of Corrosive Action: The high cost of forming machines for fibrous sheets makes it a prerequisite that preservatives shall not exhibit a corrosive action. The temperature of drying must not produce corrosive decomposition products. Chemicals or treating methods acting in any manner to change the properties of the fibers are to be avoided or carefully studied before being recommended.

6. Low Cost: The cost of any new preservative will depend not alone upon the chemical but also upon the steps necessary to obtain satisfactory treatment. The present market for general toxic chemicals will expand in some geometric progression with lowering cost of treatment.

7. Unobjectionable Color: The absence of color is preferred for nearly all purposes, although the greenish tint of copper compounds is accepted for fruit wrappers. If present, the color should not be of soluble or volatile type which would penetrate a film coat.

8. Absence of Odor: Possession of even a slight odor must be considered a serious disadvantage for chemicals to be used in many processed fibrous products. Odors generally connote lack of stability and may, if absorbed, deleteriously flavor foods.

9. No Interference with Processing Operations: In defibered materials, there must be no tendency to cause foaming of agitated stock suspensions, no plugging or dulling of cutting tools, and waterproofness of the product must not be adversely affected. Preservatives of oily character, which do not permit covering the treated article with paint or other film coatings, are restricted in application. Fibrous materials must also remain receptive to lamination and printing.

Other prerequisites may be involved in special cases, but in general, a chemical meeting the foregoing specifications will find a considerable market as a preservative for cellulosic materials.

Treating Methods and Chemicals Used

The differences in manner of introducing preservatives into undefibered wood products and felted defibered products account largely for the distinction in types of chemicals which may be applied. Wood should be treated in the final form and size to be used. Special operations may be required to obtain penetration, such as incision, high temperatures, and pressures sometimes supplemented with vacuum. Less expensive nonpressure methods are employed, but they have limitations and disadvantages.

While wood is almost entirely treated by batch methods, preservation of felted products is continuous, and uniform distribution of chemical throughout the mass is readily obtained. In wet-felting processes, the preservative is added in the fiber disintegrating machine, in a stock chest where other ingredients such as waterproofing chemicals are introduced, in the headbox immediately before forming the fibers, or after the sheet is formed but before drying.

Occasionally water-soluble preservatives or fireproofing agents are added either during dry-felting or to dried products. In the latter case a porous character aids penetration. Dry articles are seldom treated, however, because of the necessity of removing solvent, extra handling, and the greater economy of treating earlier in the manufacture.

In the wet-felting process, the fiber received at the mill is ordinarily cooked (with or without chemicals), disintegrated, refined, and then formed. During these operations, soluble constituents, which comprise some of the most readily available food for fungi, are more or less effectively removed. The stock suspension at the forming machine sometimes consists of 1 part fiber to nearly 200 parts of water. If the preservative is 0.2 of 1% of the fiber weight, it is apparent that each part of toxic chemical is subjected to the solu-

bilizing action of 100,000 parts of water. This ratio makes necessary a low solubility for the preservative if excessive amounts are not to be dissolved and lost in the white water which has drained through the sheet.

In paperboard manufacture the white water is often deflected to the sewer, although to an increasing extent mills are installing closed systems which re-use white water to recover suspended fiber. Slime-control chemicals, some of which are also effective product preservatives, are frequently used in such systems. While closing the system will permit some recovery of dissolved preservatives, the inevitable losses will probably prohibit chemicals of appreciable solubility from being applied.

Four types of toxic chemicals not applicable to wood can be introduced into a felted material and one or more chemicals of each type are being used commercially. These are insoluble powders, flocculent precipitates, selectively adsorbed chemicals, and emulsified preservatives. Until methods permitting use of the more water-soluble preservatives are further developed, these four types will find continued and increasing application. These will be discussed in order.

1. Insoluble Powders: Due to the filtering action of the fibrous mass being formed, it is feasible to use dry chemicals which are relatively insoluble. For uniform distribution throughout the sheet, the chemical should screen between 100 and 200 mesh. A greater state of subdivision of the particles results in increased solubility and further loss by passing through the felted sheet. Free flowing and wetting characteristics are important whether the powder is introduced directly into the headbox of the forming machine or as a slurry made up with water. Under proper conditions, addition of powder at the headbox results in good distribution in the stock suspension and minimizes the time for solvent action *(14)*. More than 50% of a partially soluble preservative and even 25% of a relatively insoluble substance, may be lost into the white water of an open system. The chemical must, therefore, be sufficiently inexpensive to disregard such loss if this method is to be employed. Equalized distribution across the sheet as well as throughout the thickness is essential and requires frequent control analyses. The metering of a preservative into the headbox must at all times be coordinated with machine speed to maintain a uniform concentration.

One of the major considerations of the wood preserving industry is to have the preservative present in the wood in the most insoluble form possible while maintaining the toxicity. In salt treatments, this requisite explains the development of complicated formula, wherein several ingredients are held in solution during the impregnation process by a volatile acid or alkali. Evaporation of this solubilizing agent is said to leave behind an insoluble complex. Other methods involve two separate impregnations wherein the second soluble chemical reacts upon the first to precipitate the desired compound. Some claim that the theoretically-formed compounds are not actually deposited in the wood, due to failure to evaporate the solubilizing agent or because of other interfering substances. Where a fibrous sheet is to be treated, the volatile solubilizing agent may be eliminated, and 2-step processes are much more easily accomplished *(15)*. In addition, the insoluble forms desired can be prepared as pure chemicals and added to the fibrous mass as an insoluble powder *(16)*.

2. Flocculent Precipitates: A unique preservative which pioneered the treatment of insulation materials is based upon an adsorption phenomena involving a hydrated flocculent precipitate *(17)*. The toxic ingredient usually sodium arsenite, is adsorbed on freshly precipitated aluminum or ferric hydroxide. A thick slurry of this combination is added to the fiber stock in the headbox. The large surface area of the floc results in good retention in the sheet. Drying to a moisture-free state produces an insoluble hydrous oxide with the preservative occluded or retained by a mechanism not thoroughly understood.

Other preservatives, particularly organic compounds having soluble alkali salts, may be precipitated to a flocculent state by acidifying or using metallic ions. Pentachlorophenol, developed commercially as a wood preservative *(18)*, is being applied in modified form to insulation *(19)* and paper products, replacing lower chlorinated phenols of lesser stability. Industrial use is also made of copper precipitates, such as the resinate, orthophenyl phenate, and copper "lignin chloride," for inclusion in paper to be used as fruit wrap *(20)*. Where the copper precipitation also involves addition of sodium hydroxide or carbonate, it is evident that there may be a simultaneous precipitation of the respective basic copper salts as a floc *(21)*. Retention and distribution depend somewhat on the fineness of the floc which is governed by the choice of precipitating agent, dilution, and agitation. In theory, the method of flocculent precipitation should give excellent retention, but in practice this seldom exceeds 80% for chemicals studied to date.

3. Selectively Adsorbed Chemicals: Some compounds have the ability of being selectively adsorbed by lignocellulose fibers. When an aqueous solution of sodium dichromate is poured through a suitable column of sawdust, the dichromate is retained by the fibers and the water freed from this salt passes through. Chromates have been used in wood preservation as "fixatives" in combination with several water-soluble toxic chemicals; some of these combinations are recommended for fiber board preservation.

A similar adsorption may be obtained with sodium salts of various phenolic derivatives, such as the nitro- and chlorophenols. Efforts to inject aqueous solutions of these chemicals into wood resulted only in a shallow treatment, although the water was forced deeply into the wood. Unless modified by the addition of supplementary chemicals, these soluble salts are limited in their application to wood. This very property, however, makes them of interest for fiber preservation and high retentions are claimed. The sodium salts are dissolved into the fiber suspension and agitated for a few hours in the stock chest. Subsequent addition of acid or alum for waterproofing also precipitates the preservative adsorbed on the fibers.

4. Emulsified Preservatives: The application of emulsified preservatives, while apparently abandoned for wood, presents distinct possibilities for felted fibrous products. Waterproofing of fiberboard and paper by means of wax, rosin, or asphalt emulsions is part of current practice. Dispersions of the chlorinated products of phenol, benzene, diphenyl, and naphthalene are described for preserving insulation *(22)*. Usually these emulsions are intended to become unstable in the stock suspension and are retained by the fiber as a result of the agglomeration of particles.

The retention obtained by the use of emulsions in the wet system is not high which has led to the con-

sideration of applying emulsions to the sheet after formation. Suction couch rolls or suction boxes under the sheet can be used to obtain penetration. Passing the wet sheet into a vat and through a submerged press roll would be practicable and could be followed by another set of rolls to remove the excess. Any of these methods would likewise be applicable for water-soluble chemicals. Uniformity of treatment would not necessarily be assured, however, since any deviation in suction, pressure, or board density would alter the retention. On the other hand, the loss of chemical should be small since the suction solution may be recycled. Further investigation is warranted.

From the preceding discussion, it may be seen that the low cost of preserving defibered materials results from the minimum amount of extra equipment and from continuous operation with only slight additional labor. Thus, it becomes feasible to treat the entire production with consequent assurance that complaints will not arise from misused products.

Testing Effectiveness of a Treatment

In some cases, it is not easy to determine the identity, concentration, or distribution of the preservative. Color reactions, such as used in the wood preserving industry, have not been satisfactorily evolved for felted products. With preservatives containing chlorine and depending upon that element for analysis, a correction must be made for its presence in untreated material. This correction may vary from time to time; since the chemicals themselves contain from 1 to 5 chlorine atoms, little of value is obtained from analyses not made by the manufacturer. He alone knows the identity of the preservative and the constitution of the untreated article.

Where copper, arsenic, or other elements quite foreign to the untreated material serve as the basis for analysis, more positive information is obtained. Even here, the exact identity of the preservative may be difficult to ascertain. Determining adequacy of treatment is also made difficult for the consumer by the fact that the toxic ingredients as well as the concentrations may be changed without notification.

Until further standardization, the only acceptable rapid determination of preservative effectiveness is by accelerated laboratory experiments and outdoor exposure plots. Laboratory tests for decay or mold resistance require two weeks for an indication of treatment, and several months for an evaluation. Accelerated termite tests have been developed *(23)* but need further substantiation before the methods can be considered reliable. Field tests require several months or a year for indications, and several years for conclusive results.

Conclusion

To a noteworthy degree, the preservation of wood, crop fibers, and textiles have progressed independently of each other although based upon identical precepts. Some chemicals have recently been developed which are finding limited application in all fields of preservation, but in general, each field employs processes not readily adaptable to the others. The status of the preservation of crop fibers, as raw materials or finished products, has been correlated in this paper with wood preservation. The destructive agents, methods of biological control and factors influencing the choice of a preservation technique for crop fibers have been described. The future advances will be conspicuously accelerated as the knowledge and research on preserving the various forms of cellulose are coordinated.

Solution of the problems of crop-fiber collection and preservation will extend the utilization of cellulosic residues. Abundant advantages will be consequent through increased profits for the manufacturers, additional revenue for farmers, conservation of forest, and in vast annually replenished sources of organic chemicals and fibrous cellulosic raw materials.

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Balance Sheet of the Future

A booklet entitled "The Balance Sheet of the Future," by Roy A. Foulke, has been issued by Dun & Bradstreet, Inc., 290 Broadway, New York. The publication has been prepared to present information on the subject of basic changes advocated by many business specialists and general executives, for a larger and more detailed balance sheet and financial statement of business concerns.

Among the 78 different forms of business enterprises included in this study are paper manufacturing and paper wholesaling. Important tabulated items, indicating the various ratios of 66 paper concerns, such as times current asset to current debt, net profits on net sales, and so on, are given. A similar tabulation of 146 wholesale paper concerns are included in the study.

Heads Forestry Department

John Edward Liersch has been appointed head of the Department of Forestry at the University of British Columbia. He is holder of two degrees from the U.B.C. He continued his academic education at the University of Washington, where he took his Master of Forestry.

Mr. Liersch has had practical experience with the B. C. Forest Service, the United States Forest Service, the Crown Willamette Paper Company, the Malahat Logging Company, and in recent years as a private operator in the Queen Charlotte Islands.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 22, 1941

SUMMARY

Newsprint .....2,193 rolls
Transfer pictures .....1 cs.

NEWSPRINT

——, ——, Liverpool, N. S., 2,193 rolls.

TRANSFER PICTURES

Lulia Corp., ——, Yokohama, 1 cs.

RAGS, BAGGINGS, ETC.

Atlas Waste Manfg Co., ——, Havana, 31 bls. cotton sweepings.
——, ——, Havana, 9 bls. rags.
Chase National Bank, ——, Calcutta, 166 bls. old hemp rope cuttings.
Camden Fibre Mills, ——, Bombay, 600 bls. cotton waste.
A. W. Fenton, Inc., ——, Buenos Aires, 6 bls. old hemp rags.
——, ——, Buenos Aires, 20 bls. rags.
Loumar Textile By Products, Inc., ——, Calcutta, 100 bls. old hemp rope and string cuttings.
R. L. Pritchard & Co., ——, Calcutta, 550 bls. old hemp rope cuttings.
E. C. Andres, ——, Yokohama, 100 bls. cotton waste.
J. Eisenberg, ——, Havana, 44 bls. rags.

GLUE STOCK

Darmstadt Scott & Courtney, ——, Madras, 505 bls.
Milligan & Higgins Corp., ——, Buenos Aires, 30 bls.

HIDE FLESHINGS

Peter Cooper Corp., ——, Madras, 1,010 bls.
——, ——, Calcutta, 926 bls.
H. Remus, ——, Havana, 22 bls.

CASEIN

Chase National Bank, ——, Buenos Aires, 2,502 bags.
American British Chemical Supplies, ——, Buenos Aires, 1,000 bags.
C. W. Burckhalter, Inc., ——, Buenos Aires, 250 bags.
A. Hurst & Co., ——, Buenos Aires, 268 bags.
American Cyanamid & Chemical Corp., ——, Buenos Aires, 834 bags.
Chemical Bank Trust Co., ——, Buenos Aires, 417 bags.
American British Chemical Supplies, ——, Buenos Aires, 417 bags.

LOS ANGELES IMPORTS

WEEK ENDING FEBRUARY 22, 1941

——, ——, Ocean Falls, 2,584 rolls newsprint.
——, ——, Kobe, 3 cs. rice paper.
——, ——, Shanghai, 700 bls. old rags.

May Buy America Salpa Plant

The America Salpa plant, in Spotswood, N. J., according to a press report, has been taken off the market by Joseph P. Day, Inc., of New York City, real estate brokers, and negotiations are now under way for the sale of the large industrial plant to a large paper manufacturer.

The prospective purchasers have two large New Jersey plants which they propose to consolidate at the Spotswood plant. It was learned that 500 to 600 hands, mostly men, would be employed at the plant if the deal goes through.

The plant is owned by the Spotswood Realty Company. Conveyance to the company was made in 1937 by the National Lead Company which purchased the property from the receivers of the American Salpa Corporation in 1933.

Built with Italian capital, for the manufacture of imitation leather, the plant has been closed since 1931. It cost $4,000,000 and was ready for occupancy in 1930.

The concern gave employment to approximately 400 hands but operated for a comparatively short time when it was closed down because the flow of working capital from Italy was stopped.

Several buildings comprising the plant were built by the Turner Construction Company in 1929. The plant, containing 350,000 square feet, is located on a 60-acre site.

The plant is now being used for storage purposes.

Sorg Installs New Equipment

The dominant purpose of the extensive improvement program, undertaken several years ago by The Sorg Paper Company and continued by them ever since, has been to improve the quality and uniformity of their products. With this object in view, verigraph equipment was installed on their two machines which manufacture printing papers such as offset, index bristol, postcard, photo-gelatin, drawing, lampshade, mimeograph, and numerous other specialties. This equipment enables them to manufacture at all times paper which is in equilibrium with atmospheric conditions of a given per cent of relative humidity.

The Sorg Paper Company have now gone one step further in their effort to meet the exacting demands of high-quality, printing papers by installing the most modern equipment for the automatic control of temperature and humidity in their finishing room. Due to the verigraph installation, they are able to manufacture paper with a given per cent of moisture, and their finishing room equipment will enable them to control the temperature and humidity of the air that comes in contact with all paper in their finishing room until the paper is sealed and packaged ready for shipment.

New York Paper and Pulp Market Review

Kraft Paper Production At Or Near Capacity With Strong Domestic and Export Demand—Pulp Market Firmer—Paper Board Market Strong and Prices Higher—Other Markets Show Little Change.

Office of the PAPER TRADE JOURNAL,
Wednesday, February 26, 1941.

Sales volume in many lines of paper reflects improvement, according to current reports received from many manufacturers' representatives, jobbers, and general paper merchants. The trend in consumption is upward and as paper is not within the classification of important materials for defense needs, no particular or drastic regulatory measures are foreseen for paper and pulp.

The index of general business activity declined to 120.9% for the week ended February 15, from 121.1% for the preceding week, compared with 101.9% for the corresponding week for 1940.

Paper production for the week ended February 15 was estimated at 88.9%, compared with 84.5% for 1940, with 81.1% for 1939, with 68.4% for 1938, and with 90.2% for the corresponding week for 1937.

Paper board production for the week ended February 15 was 81.0%, compared with 70.0% for 1940, with 67.0% for 1939, with 60.0% for 1938, and with 86.0% for 1937.

The holiday last Saturday had some slowing effect on the wholesale paper market. Volume over all lines is reported quite high and the average is above the like period last year.

Manufacturers' orders, shipments, and inventories, according to the summary of the Department of Commerce, for December 1940, continued the trend of the fall months of last year. The index of the value of manufacturers' inventories for all industries, was 119.3, compared with 107.3 for December, 1939. The index in paper and allied products was 112.8 compared with 102.2 for the like month in 1939.

The index value of manufacturers' shipments, of all industries (January, 1939, equalling 100), was 154 for December, 1940, compared with 128 for December, 1939. The index for paper and allied lines was 149 for December, 1940, compared with 106 for December, 1939.

Wholesale paper sales, under a steady consumer demand, are expected to rise rather slowly. This is indicated in many current trade reports. Comment from many general paper merchants in various sections of the country, reflect the opinion that, while volume is good, the margin of profit is small. This merely substantiates the general view that the current price level on many grades of paper is out of line and well below a level adequate to provide reasonably fair earnings.

Kraft paper production and shipments are reported substantially above that of last year and output is now practically at mill capacity. Export demand continues high, with difficulty being met in getting cargo space in ships. This situation is reported to be experienced in many other commodities. A shortage of cargo ships was predicted some months ago and in some quarters of the trade this lack forms a bottleneck to the unrestricted flow of commerce to South American and to other ports.

Demand for paper board continues at a high level and this market is strong at this date. Prices have recently been revised upward with metropolitan quotations on News now quoted at $42.50 per ton and Chip at $40 per ton.

Mechanical Pulp

Demand continues good for mechanical pulp. Production is at a relatively high level, with the prospect of a continuation of a good market situation this spring. Prices are unchanged.

Chemical Pulp

The chemical pulp market is somewhat firmer this week. The tone of the whole market reflects the relatively strong position of all standard grades under the influence of a good, steady demand. Prices are firm and unchanged. Little change is now expected in second quarter prices. A steady increase in the production of domestic and Canadian chemical pulp is expected to continue, especially in bleached and unbleached sulphite, as supplies of these grades are reported more and more difficult to obtain.

Rags

The market position of the higher grades of rags is reported in some quarters of the trade as rather weak at this date. On the other hand, the demand for roofing rags, especially the No. 2 grade, is very strong.

No important change in prices on any grade of new or old rags has been reported this week.

Old Rope and Bagging

The demand for old Manila rope continues steady. Prices are firm and remain unchanged at prevailing market prices.

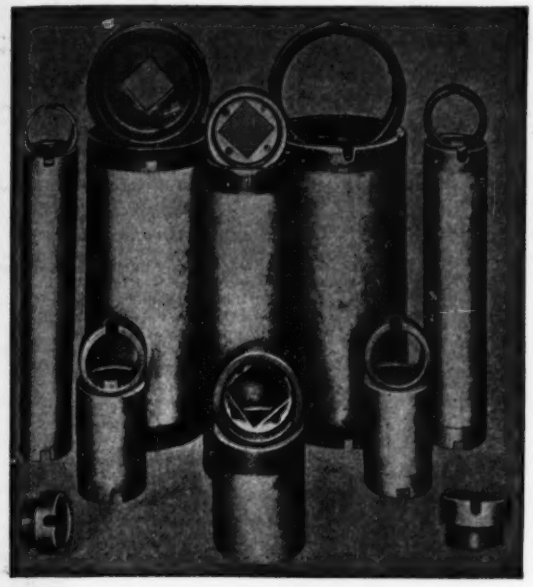
Quotations on old bagging continue quite firm and unchanged at prevailing market quotations.

Old Waste Paper

Additional firmness is reflected in the paper stock market, under the influence of the recent upward revision in paper board prices. No important change in quotations has been reported at this date, excepting on corrugated, which has been advanced and is currently quoted at from .47½ to .52½.

Twine

No important change in demand or prices has been reported in the twine market this week. This market is quite firm and demand is reported as seasonally good in many grades. Prices are firm in most grades of hard and soft fiber twines.



ELIXMAN

CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This new patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.
CORINTH, N. Y.

Why go broke on "broke"?

No mill would buy newly manufactured paper to feed it to the beaters yet the paper industry produces tons of paper which can be used for no other purpose. The point is that mills using CAMACHINES save on the "broke" loss formerly taking place at the Winder for CAMACHINES produce less culls and rejects, also narrower trim; and by handling the web gently, CAMACHINES avoid breaks and "broke".

CAMERON MACHINE COMPANY
61 POPLAR ST. - - - - BROOKLYN, N. Y.

PRICE & PIERCE, LTD

Wood Pulp & Paper Agents

60 East 42nd Street New York City

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, February 26, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported steady for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, with prices unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 13 cents per pound; 80-100 mesh, at 13½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 12 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Shipments reported fair. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Market firm. Shipments reported steady for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $1.64 per 100 pounds, in barrels, Savannah "FF" wood rosin is currently quoted at $1.64 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.39 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and nominal. Shipments steady. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton on imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported moderate for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are fairly firm and continue unchanged for the current week. Pearl is currently quoted at $2.90 per 100 pounds; powdered starch at $3 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	42.50	@	—
Chip	40.00	"	—
Sgl. Mla. Lt. Chip	55.00	"	—
White Pat. Coated	70.00	"	—
Kraft Liners	$5.00	"	—
Binders Boards	73.00	"	80.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @	$46.00	$40.25 @	$47.25
100% Rag	31.05 "	36.50	32.20 "	37.75
85% Rag	.... "	....	29.90 "	35.00
75% Rag	23.60 "	27.75	24.75 "	29.00
65% Rag	.... "	....	21.65 "	26.25
50% Rag	17.55 "	21.50	18.70 "	22.75
25% Rag	14.65 "	17.75	15.80 "	19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$9.35 @	$11.50	$11.55 @	$12.75
No. 2	8.50 "	10.25	9.65 "	11.75
No. 3	8.05 "	9.25	9.20 "	11.25
No. 4	7.70 "	9.50	8.90 "	10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—	
Moist	No prices
Dry	No prices

(Delivered)

No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered			
Unbleached Sulphite	58.00	"	63.75

(On Dock, Atlantic Ports)

Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.50	"	3.90
Kraft No. 1	3.40	"	3.80

(F. o. b. Pulp Mill)

Kraft Domestic and Canadian	2.75	"	3.37½

(Delivered)

Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.12½	@	6.37½
Silesias No. 1	4.50	"	4.65
New Unbleached	6.12½	"	6.37½
Blue Overall	4.15	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.15	"	1.20
No. 2	1.00	"	1.05
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.35

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

More than just a TRADE MARK

EXCELSIOR KNOX Woolen Co. Camden, Me. FELTS & JACKETS

BUT also a guarantee by men who for 75 years have prided themselves in making finer felts. TO YOU —this is the mark of dependability, longer felt life and greater saving.

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CAMDEN, MAINE.

West Virginia Pulp and Paper Company

230 Park Ave. New York
35 East Wacker Drive Chicago
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ENGLISH FINISH SUPERCALENDERED
MACHINE FINISHED BOOK
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. . . .

KRAFT WRAPPING AND KRAFT ENVELOPE
KRAFT LINER BOARD
BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

MILLS:
Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
Charleston, South Carolina

MOST COMPLETE ROLL CATALOG EVER PRINTED

Just off the press—this new Rodney Hunt ROLL CATALOG NO. 740 describes dozens of wood, metal and rubber rolls — including famous "Shaf-tite" patented ROLLS for carrying WET FELTS. You'll find here just the roll you want for your machine, a roll that will give *longer life* at *lower cost!*

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63 Mill Street Orange, Mass.

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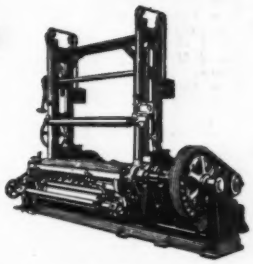

are sturdily built from bedplate up. Produce square, clean cut rolls from news, kraft, board, etc. There is a type and size for every job.

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SCREENS of Perforated Metal

The Harrington & King PERFORATING CO.
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This compactly designed instrument (the only one of its kind made) meets every demand for a neat pocket gauge to measure thicknesses with speed and accuracy.

$10.50
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B. C. AMES CO.
WALTHAM, MASS.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	2.50	@	2.75
Wool Tares, light....	2.00	"	2.25
Wool Tares, heavy..	2.12½	"	2.25
Bright Bagging	2.25	"	2.50
Manila Rope—			
Foreign	5.25	"	5.50
Domestic	5.25	"	5.50
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.80	"	.85
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.60	"	1.70
Ledger Stock Colored	1.20	"	1.30
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.40	"	1.50
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue..	.70	"	.75
Strictly Folded....	.55	"	.60
Corrugated	.47½	"	.52½
No. 1 Mixed Paper..	.35	"	.40

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.18	@	—
White Hemp.....	.18	"	—
Fine Polished—			
Fine India	.22	"	—
Unpolished—			
Box	.16	"	—
Paper Makers.....	.13	"	—
Tube Rope.....	.14¾	"	—
Wall Paper.....	.16	"	—
Wrapping	.16	"	—
Soft Fiber Rope...	.14	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.10	"	—
Mex. Sisal	.09½	"	—
Manila	.23	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07	@	.07¼
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06	"	.06¼
Washable Prints...	.02¼	"	.02½
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	—	"	.03
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03½	"	.03¾
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¼	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.30	"	1.35
Domestic No. 2...	1.10	"	1.15
Roofing Bagging..	1.00	"	1.05

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	2.25	@	2.50
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.55	"	2.75
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	2.25	"	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.40	@	2.50
No. 2 Hard White	2.10	"	2.15
No. 1 Soft White.	1.90	"	2.00
No. 2 Soft White.	1.60	"	1.75
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.20	"	1.25
No. 1 Books, heavy..	.80	"	.85
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.50	"	.55
Container Manila....	.40	"	.45
Kraft Paper	1.40	"	1.45
No. 1 Mixed Paper..	.35	"	.40
Straw Board Chip...	.35	"	.40
Binders Board Chip..	.35	"	.40
Corrugated Board...	.55	"	.60
Overissue News.....	.70	"	.75
Old Newspapers.....	.60	"	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.90	"	3.00
No. 1 Soft White	2.75	"	2.50
No. 2 Mixed.....	.75	"	.80
Solid Ledger Books..	1.50	"	1.75
Overissue Ledger Stock	1.75	"	2.00
Mixed Ledgers.....	1.50	"	1.75
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock	.75	"	.85
Manila Env. Cuttings	1.85	"	2.00
Manila Envelope Cuttings, extra quality	2.35	"	2.60
White Blank News..	1.40	"	1.50
No. 1 Kraft.....	1.25	"	1.30
Extra No. 1 Kraft..	1.45	"	1.50
Mixed Papers.....	.30	"	—
Print Manila	.55	"	.60
Container Manila....	.60	"	.70
Old Newspapers.....	.50	@	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	1.00	"	1.10
Box Board Chips....	.40	"	.45
Corrugated boxes....	.50	"	.55
Kraft corrugated boxes	.85	"	.95
New Kraft Corrugated Cuttings.....	1.40	"	1.50
Screening Wrappers.	.70	"	.80

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	3.00	"	—
Domestic	2.80	"	3.00
Sisal Rope.....	2.90	"	3.00
Mixed Rope	.85	"	1.00
Transmission Rope—			
Foreign	2.50	"	2.75
Domestic	2.75	"	2.90
Soft Jute Rope.....	3.50	"	3.75
Manila Rope—			
Foreign	5.25	"	5.35
Domestic	5.50	"	5.75
Jute Carpet Threads	2.00	@	2.25
Bleachery Burlap....	4.00	"	3.25
Scrap Burlap—			
Foreign	2.60	"	2.65
Domestic	2.60	"	2.75
Scrap Sisal.....	2.75	"	3.00
Scrap Sisal for Shredding	2.90	"	3.25
Wool Tares—			
Foreign	2.70	"	2.80
Domestic	2.50	"	2.60
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	3.75	"	4.00
Heavy baling bagging	2.75	"	3.00
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.04	"	.04¼
New White No. 1.	.06¾	"	.07
New Light Flannelettes	.05	"	.05¼
Canton Flannel, Bleached	.0625	"	.0650
Underwear Cutters, Bleached	.06	"	.0625
Silesias No. 1.....	.05	"	—
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached....	.06	"	.06¼
Blue Cheviots.....	.04¾	"	.04½
Fancy	.02	"	.02½
Washable	.02	"	.02½
Cottons—According to Grades—			
Blue Overalls.....	.04¼	"	.04¾
New Black, Soft..	.03	@	.03¼
Khaki Cuttings.....	.02¼	"	.02
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.06¾	"	.07½
New Canvas.....	.06¾	"	.07½
B. V. D. Cuttings...	.06½	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.75
Miscellaneous	2.40	"	2.60
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.50	"	1.75
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.25
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas	.04¼	@	—
Dark Cottons.....	(nominal)		
Dutch Blues.....	(nominal)		
New Checks and Blues	(nominal)		
Old Fustians.....	(nominal)		
Old Linsey Garments.	(nominal)		
New Silesias.....	(nominal)		

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.95	"	1.10
Blanks	1.50	"	1.60
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	1.00	"	1.10
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.40	"	.50
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

E. A. Oberweiser Expects Gains

Although the future is unpredictable, the Fox River Paper Corporation, Appleton, Wis., entering its third year under a new organization with E. A. Oberweiser as president, looks forward to new gains in business volume.

"It is our hope we can make the same gain in 1941 that we made in 1940 over the previous year," said a statement issued by the company last week. "Our payroll, exclusive of office and administrative employees, increased more than 10 per cent in our second year of operation of these mills, following an increase of more than 20 per cent in our first year. With reasonably good business, and the addition of about 70 people in our Ravine mill, the amount of money put into circulation in this community should be the highest that the firm has distributed locally in many years."

Reminding of the unpredictable nature of 1941, the company declared that "While we expect general business to be good and our own branch of the paper industry to show definite gains, the situation is so unusual that we have little precedent to go on. The high tax rates may be a deterring influence upon heavy purchasing of advertising and similar elements of paper consumption. This, too, we cannot judge at this time."

Diorama Shows Paper Making Process

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 24, 1941—Carter Rice & Co., Corp. is displaying a diorama at the office, which shows the complete process of paper manufacture from pulp logs to the finished product at the plant of the Hammermill Paper Company, Erie, Pa.